



CORPORATION OF GLASGOW

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# REPORT

OF THE

# MEDICAL OFFICER OF HEALTH CITY OF GLASGOW

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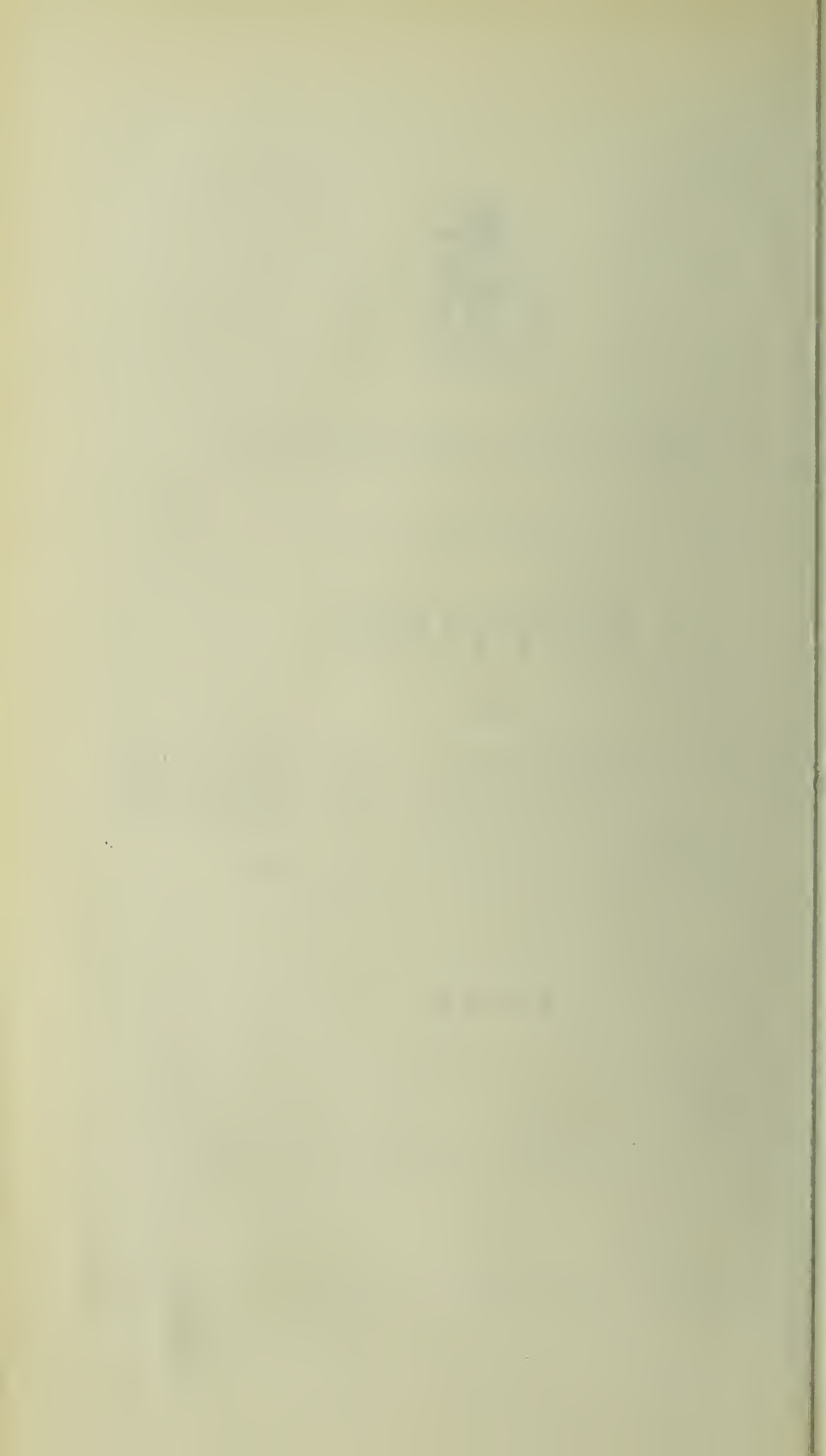
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## PREFACE.

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The outstanding event of the year occurred on May 15th when there came into operation, in terms of the Local Government Act, the "Scheme for the Administration of the Functions of the Corporation of the City of Glasgow relating to (a) Education, (b) Poor Law, (c) Public Health, and (d) Lunacy and Mental Deficiency." The functions of the Health Department were greatly augmented by the transference to it of the more purely medical and preventive services included in the administrative scheme. At the same time a measure of reorganisation within the Department itself was necessary to ensure unified administration of the combined new and old municipal health functions. As the application of the Local Government Act meant virtually a new constitution for the Health Committee and the Department, a full description of these important and fundamental changes is given in Section I. of the report. The scheme for the reorganisation of the Health Department is also included, showing in schematic form the four main branches into which it has been found convenient to sub-divide the unified functions, viz.—(1) The general public health services ; (2) the combined education and child welfare services ; (3) the transferred general hospitals and the outdoor medical services in respect of the poor law ; and (4) the mental services.

The actual transference took place with great ease and smoothness, largely due to the assistance and co-operation of everyone concerned. The succeeding months have been fully occupied with the work of coalescence and consolidation, and I am greatly indebted to my colleagues in the new branches of the service for their cordial co-operation in overcoming initial difficulties.

For various reasons the appearance of this Annual Report is later than usual, as it was thought advisable to wait for the Census figures and for other information to complete the contents. Three new branches of work fall to be reviewed—(a) the Educational Health Service ; (b) the General Hospital and Outdoor Medical Services ; and (c) the Mental Service. The report on the medical inspection and treatment of school children for the year ended 31st July, 1930, has already been issued separately, and it is proposed to maintain this arrangement owing to the fact that the school year ends on 31st July. The two last mentioned services are dealt with briefly in this report the sections devoted to them being somewhat in skeleton form.

Opportunity will be taken next year to rearrange the whole report with certain sections abbreviated and others expanded.

A brief review of some of the more salient points in this report may be given.

*Local Government Act.*—The operation of the Local Government Act has revealed unsuspected ramifications, and has disclosed many problems which will require careful enquiry and consideration. Foremost among these is hospital provision, as regards which the Local Government Act lays down certain general principles, and leaves to the new and much enlarged local authorities the duty of applying them. In the pursuit of a hospital policy, the circumstances of individual areas differ widely in their details, depending upon the nature and amount of the accommodation they already possess, the size and quality of the institutions transferred under the Act, and the hospital needs of the area in relation to voluntary hospital provision. Section 27 of the Act, which was introduced at the instance of the Corporation, enables hospital facilities to be reorganised or expanded for the treatment of sick persons generally. This section controls the situation, and allows full scope for regional co-operation and a future development of hospital policy as between the local authority and voluntary endeavour.

Reorganisation of hospital facilities is under consideration, and one of the primary objects is to allow of the attainment of as much elasticity as possible in the use of hospital beds and the adoption of higher standards. In considering reorganisation the distinction between the infectious and non-infectious sick need not be too rigidly maintained; in fact, within certain limits a variety of diseases may be treated under one hospital roof, be it a general hospital, a hospital for infectious diseases, or a tuberculosis hospital. It has long been the custom to treat pneumonia in fever hospitals where wards are also used for the treatment of phthisis patients. It may be advisable that certain types of chronic chest diseases be admitted to tuberculosis institutions. A ward in Robroyston Tuberculosis Hospital has been recently adapted for puerperal pyrexia and puerperal fever. In Mearns Kirk Hospital for children, which is primarily for the treatment of pulmonary or non-pulmonary tuberculosis, other orthopædic cases are being admitted, including crippling due to chronic chest affections, and so on. These points are mentioned because any hospital scheme under the reorganisation provisions (Section 27 of the Act) should be made in a manner which will secure the best and freest use of institutions according to the needs of the moment, or as they



may arise in the future. In Glasgow, where some 6,200 beds on a conservative estimate make up the total of original and transferred accommodation, elasticity and interchangeability in the use of institutions become matters of great importance.

Another important practical point, which has a bearing on adequacy and standards of accommodation for the sick, is the varied use to which some of the transferred institutions are being put. A good deal of excellent hospital provision is devoted to the care of aged infirm persons and chronic sick due to a variety of permanent ailments. In a recent survey of accommodation it was found that over 25 per cent. of the hospital beds were so occupied, while at the same time the winter demand for the treatment of acute cases led to overcrowding of the hospital wards. Cases on the borderline between health and invalidity are numerous, and the solution of this problem of classification is far from easy. Many aged and infirm could be accommodated in institutions other than up-to-date hospitals. As regards the more chronic infirmities, classification is more difficult, and a too abrupt separation as between acute and chronic sick is to be avoided.

Again, the question of adequacy of hospital accommodation is closely bound up with the possibilities of home treatment of the sick poor. A too free use of accommodation for minor ailments or for affections which could be nursed at home tends to limit the usefulness of hospitals. It is more than likely that an improved outdoor medical service associated with a domiciliary nursing scheme will become an essential auxiliary and will in turn materially conserve hospital accommodation. A scheme of this kind appears to be essential to the efficient and economical conduct of the general medical work of the local authority.

There also arises the very important question of the mutual relations to be established with the voluntary hospitals. Co-operation is now very close in many respects, and will undoubtedly become still firmer as experience may determine. These and other questions, such as the clinic in association with the hospital and its function as a diagnostic centre, the comprehensive training of nurses, medical research, and other matters, are engaging attention, but it is premature to refer to them in any detail at this stage.

*School Medical Inspection and Treatment.*—The scheme provides for administrative unification of the medical services in respect of school children with those of the maternity and child welfare branch

under the general supervision of Dr. Arbuckle Brown, formerly School Medical Officer and now a Deputy Medical Officer of Health. It also ensures correlation with the functions of the Education Committee, who are intimately concerned with the health of the scholars and the hygiene of child life. Much useful co-ordination has been effected in the joint use of clinics, &c., while the possibility of establishing joint clinics is being prominently kept in view in areas where development or consolidation is indicated. Plans have been prepared for a combined clinic to serve the Garngad and Townhead districts. Ground has been obtained for a school treatment clinic close to the child welfare centre in Orr Street, Bridgeton, while the question of a joint building is under consideration for the South-Eastern area of the City. It is in these areas that the need for expansion is greatest. As explained, the report on Medical Inspection and Treatment of School Children for last year has already been issued. It points out very definite improvements which have taken place in the health of children, as, for instance, in the steady increase in the average heights and weights which has been observable for some years past. This service is dealing more and more effectively with a large number of minor ailments, and the systematic attention being given to these is bearing fruit.

The modern type of school now being erected is admirably designed to secure the maximum of fresh air and sunlight. The medical examination and treatment of school children, valuable as it may be, is of secondary importance to the adoption of the principles of hygiene in so far as they can be applied to school buildings or taught and practised in school curricula. A systematic survey of the sanitary condition of the older schools is being made..

*Mental Services.*—As regards the mental services, the principal difficulty has been concerned with lack of accommodation for acute patients in the mental hospitals. The whole question of accommodation for mental patients is under special review. The indications are that the number of persons under institutional care continues to increase. This increase depends on three main factors, namely, increase of population, increasing longevity of the population, and the lessening death-rate in mental hospitals. The factor which appears to be affecting the position most of all is that a larger proportion of the population are now surviving to the age period when senile mental affections are common. Patients of this kind account for much of the congestion in the mental hospitals. Apart from this natural increase of persons under institutional care, there is no evidence

that any real increase is taking place in the incidence of mental disorders. The full effect of these factors has been felt in the mental institutions in which Glasgow patients are accommodated, and the problem of meeting this difficulty is an important and serious one.

The medical superintendents of the mental hospitals have assisted materially in providing some additional accommodation in their already crowded institutions. Arrangements are being made to increase by a further 60 beds the mental observation ward accommodation at Stobhill Hospital. When this is completed the total accommodation for this purpose will amount to some 250 beds. The Glasgow Parish Council was a pioneer in making provision of this kind where mental patients could be admitted and treated without immediate resort to certification and admission direct to a lunatic asylum. The medical and social advantages of a policy of this kind have been noteworthy, and the observation wards in connection with the Eastern District, Stobhill, and the Southern General Hospitals have fulfilled a most valuable function. Reports from the mental institutions are given in briefly summarised form in the following pages. It is hoped next year to make this section somewhat more ample and explanatory of the work carried out.

*Vital Statistics.*—The Census, taken on 26th April, 1931, showed that the population was 1,088,417, an increase of 36,890 on the figure for the same area in 1921, taking into account the territory and population added to the City in 1926. Accurate population figures have not been obtainable since the Census of 1911 for the various reasons given in Section I. In future there will be less dubiety, as the Census will be taken at five-yearly instead of, as formerly, ten-yearly intervals. Throughout the report the vital statistics are based upon an estimated population of 1,088,810 for the year 1930. A full report on the Census has not yet been published, but it is anticipated that important information bearing upon the volume of overcrowding and differential death-rates in the various areas of the City will be forthcoming, information which it has not been possible to obtain accurately for 20 years.

On the revised population, the general death-rate was 14·2 per thousand of the population, as compared with 16·3 for the preceding year. The mortality has remained fairly uniform for the past ten years at from 14 to 15 per thousand of the population, with the exception of certain years, such as 1922 and 1929, when influenza and influenzal pneumonia were prevalent.

*Infectious Diseases.*—Among the infectious diseases pneumonia again stands out prominently as a cause of sickness and death. In the year under review a measles epidemic was present during the first quarter, and was largely responsible for a death-rate of 16.1 during this period. The last quarter of the year was marked by a higher incidence than usual of pneumonia associated with a series of fogs during December, when a total of 129 hours of fog over a period of 14 days was recorded at Glasgow Cross. The unfavourable effects of fog associated with low temperature, especially when occurring at a period of the year when pneumonia is prevalent, have been described from time to time. As much accommodation as possible was devoted to the treatment of respiratory diseases, and on 28th December, 522 pneumonia beds were so occupied in the fever hospital wards, exclusive of a large number in the transferred general hospitals. Scarlet fever, which was characterised by an extensive and widely distributed autumnal prevalence is nowadays extremely mild, its death-rate 38 per million of the population, being low compared with the considerably increased prevalence of the disease. The mildness of the outbreak and the use of serum in the treatment of the more severe cases have reduced the fatality of scarlet fever to a minimum. The policy of home treatment of the disease was pressed, as much as possible, as far as the provisions of the Public Health Act permitted. The enteric group of infections remained at a low figure. The majority, 91 out of 140 verified during the year, belonged to the mild Paratyphoid B. form. This small remaining incidence of what was formerly a prevalent and serious infection is sporadic and elusive, and efforts to trace the sources of infection, with a view to eradication, have not met with success. The position as regards encephalitis lethargica has been again reviewed. There are still 475 patients suffering from the after effects of former epidemics, principally that of 1923. As regards the special wards in Stobhill Hospital, practically all the patients from outwith the City have now been removed elsewhere by their respective local authorities, and this has considerably eased the hospital situation.

*Tuberculosis.*—The death-rate from phthisis, 0.8 per thousand of the population, is the lowest on record, and represents a further step in the gradually diminishing incidence of this infection. The number of cases of pulmonary tuberculosis registered during the year, 1,687, is little more than two-thirds of those notified as recently as 10 to 15 years ago. A review of the factors associated with this decline was given in last year's report. It was pointed out that, having regard to the special circumstances and housing conditions



in Glasgow, administration, broadly speaking, proceeds on the principle of providing suitable care and treatment for the affected individual, and preventing as far as possible massive infection of contacts by providing hospital accommodation for advanced cases on an ample scale. The saving of life which the declining figures represent has taken place at the later ages of life. Phthisis is still an insidious and acute disease among adults of either sex between 15 and 25 years of age. As regards non-pulmonary tuberculosis, the decline in incidence and severity has also been striking. This form of tuberculosis lends itself to remedial treatment, and the opening of Mearns Kirk Hospital, with 466 beds for children, has enabled large numbers of children to be treated under specialist care and by open air methods. As between Robroyston and Mearns Kirk Hospitals a considerable transference of children has been effected, the former institution devoting itself more to the adult forms of the disease.

During the last twenty years the death-rate from non-pulmonary tuberculosis in Glasgow has fallen more rapidly than has the corresponding rate for tuberculosis of the lung. Tracing the former rate since 1915, it is found that the decline in abdominal tuberculosis, i.e., that form of the disease which is generally accepted as being caused by the bovine bacillus—has proceeded at an accelerated rate as compared with disease of other organs. This affection has become more difficult to recognise and more amenable to treatment, while tuberculosis of the glands of the neck, also regarded as mostly a product of the bovine bacillus, has markedly declined in incidence and severity. This reduction in bovine infections cannot be definitely ascribed to any particular underlying cause, but, in the absence of a satisfactory alternative explanation, it appears that pasteurisation of milk should be included among the likely factors, and that public health administration should, for this reason among others, support the efficient pasteurisation of ordinary market milk. Large centres of population should possess power to enforce this safeguard. A recent memorandum by the Ministry of Health on Bovine Tuberculosis in Man (Reports on Public Health and Medical Subjects, No. 63, 1931) concludes as follows —“It will be seen that pasteurisation carried out in a suitable apparatus and under strict scientific control is capable of protecting the consumer from the danger of infection with the tubercle bacillus, and that milk so treated appears to retain its valuable food properties practically unimpaired.”

*Maternity and Child Welfare.*—During the past two or three years increased publicity has been accorded in Government and other

reports and in the medical and lay press to maternal mortality and invalidity due to child birth. Enquiries under the ægis of the Department of Health for Scotland are being conducted with the help of medical practitioners throughout the City. Puerperal sepsis contributes largely to maternal sickness and death. In 1929 there came into force the Puerperal Fever and Pyrexia Regulations, which made the presence of even a mild degree of pyrexia or fever in women after child birth a notifiable condition by itself whatever its cause might be. The effect of these regulations in operation is fully discussed in the report, and it is obvious that a great improvement has taken place in reporting and securing appropriate treatment for this infection for which increased hospital provision has been made. It is difficult to assess correctly the mass of undefined pyrexias, and much consideration has been given to putting the question of classification on as sound a footing as possible in order to judge future incidence and results of treatment. A portion of the report is, therefore, devoted to a discussion of the facts as disclosed by the notifications of puerperal pyrexia and puerperal fever. Suitable ward accommodation (50 beds) under open air principles has been made available at Robroyston, where due regard can be paid to the isolation of virulent and highly infectious cases by the provision of cubicle observation wards.

In view of the importance of the subject, there is incorporated in the report the results of an investigation into the epidemiology, bacteriology and treatment of puerperal sepsis by Dr. Margaret Thomas, carried out in Belvidere Fever Hospital. Among the 800 patients with whom her survey deals, no less than one-fourth were infections following abortions or miscarriages, a rather unexpected proportion. Dr. Thomas points out that the prevalence of this association is apt to be overlooked. In 43 per cent. of the total patients, the infection was of an extremely severe type: invasion of the blood stream was ascertained in 14 per cent. Milder cases lend themselves to appropriate treatment, but this high proportion of severe infections accounts for the case mortality rate of 15 per cent., which is a fairly low figure considering the gravity of this disease. Dr. Thomas reviews with great care the results of various methods of treatment advocated from time to time with regard to which certain distinct advances have been made in recent years. The problem of preventing puerperal sepsis is an extremely difficult one, into which many factors apparently enter. It may be remarked that the elimination of the very grave types of the disease, which form so high a proportion of the cases, will constitute a very severe test of the efficacy of whatever specific preventive measures may be adopted in actual practice.



In the same section of the report an account of the detailed working of the ante-natal service by Drs. MacCunn and Wylie is included. This service is rapidly increasing in popularity. Almost 1,000 additional women attended the centres during the year.

*Blind Persons Act.*—The special certifying clinic for blind persons established last year is proving extremely valuable. It serves Glasgow and the South-West of Scotland under the Joint Committee for this large area, and has gradually assumed certifying functions for all purposes, including the assessment of applicants for admission to the register of blind persons, old age pensions, and for augmented grants under public assistance. It also records information as to the causes of blindness, and advises with regard to treatment. The Department of Health has adopted this organisation as a model on which similar clinics should be established in other centres. During 1930 a total of 1,166 persons was examined, of whom 727 were certified to be blind. An increase in work has resulted, owing to the decision of several local authorities to increase the allowances to the blind. The question of standards of blindness is receiving continued attention.

*Venereal Diseases.*—At the various treatment centres the number of new cases of venereal disease during 1930 shows a slight diminution as compared with the preceding year. On the other hand, there is an increase in the total number of attendances for treatment, and it is satisfactory to note that a larger proportion are continuing attendance until the completion of treatment, an improvement specially noticeable in the male clinics. At the same time defaulting is still much in evidence, and Dr. R. J. Peters is continuing his observations on this very difficult question, as well as upon the decided reduction which has taken place in the late effects of syphilis. Arrangements have also been made by inter-clinic collaboration to maintain as far as possible uniform standards of treatment in the various clinics.

*Housing.*—The number of linings for new houses granted by the Dean of Guild Court for the year up to 31st August was 4,191, half of which (1,958) were three-apartment houses mostly of "intermediate" type. This type of house is undoubtedly the most popular, as it is the most serviceable for the relief of overcrowding under a controlled system of letting for this precise purpose. Unfortunately the prevailing unemployment prevents very many families from improving their housing conditions. Houses may be allocated to tuberculous families up to 10 per cent., and during the past two years 248 houses have been applied to this purpose. Numerous new suburbs

have been created within and outwith the City boundaries, and a considerable exodus of population has taken place from the centre outwards. The extent of this will be capable of accurate measurement when the Census figures are analysed. Very sensible relief to the general situation has been afforded by combined municipal and private enterprise. The vacation of large houses in the central areas of the City is leading to their sub-division into smaller dwellings, and bye-laws to control this process are under consideration. Another question which is attracting attention is the feasibility of controlling the occupancy of one-apartment houses, and a full report on this question has been prepared for the consideration of a special sub-committee of the Health Committee. Owing to various reasons, overcrowding in these small houses has diminished little in recent years.

Proceedings under the Housing Acts as regards Slum Clearance and Rehousing are detailed in the Housing Section of the report. The Calton Improvement Scheme, involving 1,288 houses, was finally confirmed by the Department of Health in January, 1931. This brings the total dealt with under similar schemes up to 6,444 houses. Rehousing operations are proceeding continuously, in connection with which certain points of interest arise. Among 5,126 tenants dispossessed since rehousing began, 14 per cent. have found accommodation other than in the new houses, while in 12 per cent. the new houses have been filled by "substitution." Again, "re-lets" in rehousing schemes occur with some frequency: during 1930 there were 315 of these. It is thus apparent that the rehousing schemes provide a substantial surplus or reservoir which enables continuous closure and demolition of groups of insanitary houses to be carried on concurrently with larger clearance schemes, a most important and valuable asset. Further, it is often necessary to rehouse families from properties condemned by the Master of Works, and a considerable proportion of tenants from the 894 such "dangerous buildings" dealt with in the past five years have found their way into rehousing schemes. It is thus apparent that displacements of families in these various collateral ways from insanitary houses accounts for a much larger number than is shown by the actual figures of the schemes themselves, and may be estimated at 7,500 as an approximate figure.

Since the Housing Act, 1930, came into force, areas in the north, south and eastern parts of the City have been surveyed, with a view to the preparation of clearance schemes. The Committee on Housing, on 17th December, decided upon a programme for the next three years involving 7,500 houses for slum clearance, 9,000 for abating overcrowding, and 3,000 in respect of growth of population. Previous

to this decision a further survey of the City had been made, which showed that, while a considerable reduction had taken place in the number of unfit houses as the result of former and current procedure, there still remained some 13,568 which could properly be included in future operations.

The results of rehousing, the supervision of removals, and the progress of the new tenants, are again fully presented because of the great importance of this aspect of housing enterprise. Management involves something more than the collection of rents and attention to repairs. Dr. W. C. Gunn contributes a description of a comprehensive inspection, while reports of the supervising nurse inspector and others are included, along with the observations and impressions of certain schoolmasters in the Eastern area of the City, who have gladly acceded to a request for their experience of rehoused children attending their schools. Although there are difficulties and disappointments associated with this work, there is no doubt that the results are on the whole excellent, in fact, better than were anticipated, and further that standards are gradually rising rather than falling. Vermin infestation, which threatened to become a serious nuisance, has been greatly reduced by timely and appropriate measures of prevention and supervision. The Director of Housing has arranged that in future schemes, skirting boards and picture rails will be so constructed as to prevent harbourage of bugs.

*Bacteriological Laboratory.*—The report of Dr. W. R. Wiseman, who succeeded the late Dr. R. M. Buchanan as City Bacteriologist, shows continued increase in the work of the laboratory, the figure for the yearly examinations of specimens (39,876) exceeding by about 5,500 the highest number previously overtaken. In the report certain observations are recorded on the result of the modern Kahn test for venereal disease. The routine examination of ordinary milk samples taken on arrival in the City showed that 45 per cent. were within the maximum allowed for "Certified" milk and 31 per cent. within the limit allowed for Grade "A" milk. As regards the designated milks, 95 per cent. were within the maximum bacteriological count allowed.

*Port Local Authority.*—Considerable experience has now been obtained in the working of Article 28 of the International Sanitary Convention of Paris, 1926, and the regulations made by the Department of Health for Scotland under Section 78 of the Public Health (Scotland) Act, 1897, which came into force on 1st January. Circular letters, explanatory of the regulations and of the procedure to be adopted in Glasgow, were issued to ship owners. These circulars are given in

the text, as is also a brief report on a fatal accident in the use of hydrocyanic acid gas as a fumigant for the destruction of rats. The report also contains a circular dealing with the prevention of bug infestation of ships, a common and irritating nuisance on shipboard. It is of little use endeavouring to eradicate these insects without co-operation and a knowledge of the life history of the insect on the part of masters of ships and others.

*Food Inspection.*—A very large amount of work is carried out by this department in the inspection and control of foodstuffs generally. Special notes are given in the text with reference to tea, cheese, self-raising flour, cod liver oil compounds, and preservatives in food. With regard to the last mentioned, the addition of sulphites to mince is still much in evidence.

*Air Purification.*—An increased number of prosecutions was taken against steam wagon owners during the year as compared with past years, and the Police Departments in all divisions of the City are co-operating in the prevention of this smoke nuisance. A new power is contained in Section 67 of the Motor Vehicles (Construction and Use) Regulations, 1931, and it is under these regulations that most prosecutions will now possibly be taken. The records of the nine soot gauges indicate a reduction of 4.62 tons of soot and dust per square mile, as compared with the previous year, as also a reduction of 13.52 tons over the average of the past six years. The classes on smoke abatement and furnace management continue to be most successful, with over 100 enrolments. Various local authorities, together with the Scottish Branch of the National Smoke Abatement Society, are again taking active steps to secure a Smoke Abatement Act for Scotland.

*General Sanitation.*—The reports of the Divisional Sanitary Inspectors describe a wide and increasing range of functions. A survey made in 1925 of water-closet accommodation, ashbins, and baths in houses has been brought up to date, and is included in the report. In the Northern Division a useful review of the occupancy of 1,125 "intermediate" houses in that area has been made. The great public health value of this type of house is shown by the fact that 952 families from overcrowded one and two-apartment houses were transferred to houses of three and four apartments. Those who came from one-apartment houses had an average number of six persons per room, and those from two-apartment houses three persons per room, whereas in the new houses the average occupancy is 1.9 persons per room. The general standard maintained in these "intermediate" schemes



is extremely high. In the Eastern Division the powers obtained under the Glasgow Corporation Order Confirmation Act, 1929, to control tents, vans, and sheds have been consistently applied. Many of the owners of these structures removed them out of the City rather than apply for a permit, while several applications have been refused, resulting in a reduction of 174 vans. By the end of the year five separate sites were occupied by 86 vans, with a population of 255. Very decided improvement has thus been effected in the dispersal of collections of vans used as dwelling-houses. In the South-Western Division an intensive investigation into the housing conditions in an area has been carried out, and the results are given along with a discussion of possible standards of occupancy.

*Infectious Diseases Hospitals.*—Reports of the hospital superintendents are incorporated. The new observation ward at Belvidere Hospital was opened during the year, and immediately proved its utility. Associated with it is a small operating theatre, with which this hospital is now equipped for the first time. The value of the observation ward in a fever hospital is undoubted, and the three larger hospitals are now furnished with two pavilions each. An ordinary ward is readily convertible, and it is being increasingly felt that a still larger proportion of the accommodation for infectious diseases should take this form. The extension of Bellefield Sanatorium was finally occupied during the year, and this institution now provides for 108 beds. A considerable amount of scientific work is being undertaken in the study of the various infections, including the value and scope of the Dick test for scarlet fever, investigation into erysipelas, typing of the organisms of pneumonia and the persistence of the organism in the sputum of convalescent patients, comprehensive studies in the treatment of pneumonia, especially with S.U.P. and oxygen, the bacteriology and treatment of puerperal fever, &c.

I have endeavoured to discuss briefly some of the more prominent features of public health administration by way of a preface to this report. In presenting it I desire to acknowledge the services of the various contributors. Mr. William M'Kean has as usual given much time to its collation and preparation, as well as to its general arrangement. The services of Mr. Ritchie in the preparation of the statistical tables should also receive special mention.

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*Medical Officer of Health.*

PUBLIC HEALTH DEPARTMENT,  
GLASGOW, 12th October, 1931.





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# REPORT

OF THE

## MEDICAL OFFICER OF HEALTH

FOR THE YEAR

### 1930

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### PART I

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### SECTION I.

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#### POPULATION, &c.

It has usually been possible to issue this report in the month of June. This year, however, several causes have contributed to delay its appearance, such as pressure of work under the operations of the Local Government Act, 1929, and the organisation of the Congress of the Royal Sanitary Institute, which met in Glasgow during July. It was also desirable, indeed essential, to await the preliminary report of the Census of April, 1931, because of the extreme uncertainty surrounding estimates of the population on which are based the statistical data of mortality and sickness rates for the city and its municipal wards.

The population of the city, at the Census taken on 26th April, 1931, was 1,088,417, an increase of 36,890 on the figure for the same area in 1921, taking into account the territory and population added to the city in 1926. This is somewhat lower than was expected, although various factors have contributed to render estimates during the intercensal period very uncertain.

For instance, the Census of 1921 was delayed till June, when many of the inhabitants were on holiday. It was therefore decided, for the purposes of local statistics, to reckon the then population at

1,075,000, or some 40,000 in excess of the number as shown by the Census. Adding to this the Census population of 17,344 for the area added to the city in 1926, the total becomes 1,092,344 in respect of the year 1921, so that there is now a decrease of 3,927, or nearly 0·4 per cent. as regards the population of the extended city. Allowing for this decrease over the last decennium, the population for the year under review, 1930, may be estimated at 1,088,810, which is therefore taken as the figure on which the vital statistics of the municipal ward and other rates have been calculated, as given in the tables in the Appendix.

This figure of 1,088,810 represents 70,000 less population than was estimated for the year 1929, and effect has been given to the consequent adjustment in the various rates for the preceding years where comparisons are shown throughout this report.

The causes which gave rise to uncertainty in calculating population in past years may be briefly referred to—(1) The assumption of ten years ago that the Census population understated the true facts by over 40,000 persons is now confirmed by the 1931 Census relating to the health resorts in the Firth of Clyde. For instance, the population of the County of Bute is now given as 18,822, or 14,889 less than the figure of 1921, *i.e.*, a decrease of 44·4 per cent. Dunoon is lower by 40 per cent., Largs by almost 36 per cent., Girvan by 27 per cent., Saltcoats by 25 per cent., and so on. (2) In intercensal periods the factor of number of persons per house, as at the preceding Census is used as a basis of calculation. It had been known for some time that this figure was becoming very uncertain owing to economic and housing changes which had been taking place. In large groups of houses the average occupancy was becoming gradually reduced, particularly in smaller houses. Taking this figure generally for the city, while in 1921 the Census gave a factor of 4·45 persons per house the recent 1931 Census revealed a reduction to 4·16, a sharp and considerable fall. The number of persons per house has shown a decline with each Census since the beginning of the century. The rate of fall has been irregular owing to abnormal conditions of housing, a period of cessation of building during the war from 1916 to 1918 being followed by extensive housing operations since then. (3) A further factor in the situation has been a decline in the natural increase of the population as shown in a chart in last year's report showing that, since 1926, the excess of births over deaths was not being maintained. Indeed, since 1922 there has been an almost continuous reduction, which is coincident with the general reduction which has occurred in the population of the country as a whole.

The Census data will be later analysed in greater detail, when it will be possible to assess more accurately some of the very important movements of population and the social changes which are now taking place.

*Ward Populations.*—The estimated populations of municipal wards are given in the Appendix Table No. 1. The changes from year to year

in the ward populations are governed, almost wholly, by the number of houses erected. In 1930 there has been more movement of tenants than has been the case since the beginning of the war.

The largest ward population is 58,236 in Whiteinch, which contains the largest Corporation housing scheme, and a considerable amount of private enterprise operations. In Gorbals, the population is 45,384, which is followed by 41,420 in Provan, where a considerable number of houses have recently been under construction by the Corporation. These wards have populations from three to four times the numbers in such wards as Blythwood (13,761), Exchange (16,657), and Langside (18,146).

*Institutional Population.*—At the special Census which is taken each year on 30th June, the number of residents in institutions was found to be 31,631, an increase of 98 on that for 1929.

*Density.*—The acreage of the city at 29,511 remains the same, but with the reduction in the estimated population, the number of persons per acre has been lowered to 37, compared with 39 given in the Report for last year. Woodside Ward with 200 persons per acre is the most densely populated district, but there are large areas in other wards quite as thickly populated if allowance be made for unbuilt-on areas. Calton is an instance. If Glasgow Green be excluded, the density of 112 would be doubled. With the adjustment of the populations in view of the new Census return, there are considerable differences compared with the estimated populations of a year ago, but it will be necessary to await the detailed Census report to make any useful comparisons. The density in each municipal ward on the new estimated populations is given in Table I. in the Appendix.

*Inhabited and Empty Houses.*—In Appendix Table II. are shown the numbers of inhabited and empty houses in each municipal ward as at Whitsunday, 1930. With regard to the occupied houses, a comparison is shown in the table with the numbers in the respective municipal wards for the preceding year. The differences shown this year are more numerous and larger than has been the case during the past ten years, and would seem to indicate more movement among the population.

Larger increases in the numbers of inhabited houses in municipal wards are again associated with the activities of the Corporation in the erection of housing schemes, as is shown by the increase of 2,455 in Whiteinch Ward, where Knightswood scheme has been completed—an increase of between 20 and 25 per cent. in the total number of houses in the ward. The same explanation accounts for the increase of 950 in Ruchill, 863 in Provan, 341 in Shettleston, and 276 in Dennistoun. In Cathcart, however, the increase of 1,011 is explained by the continued operations of private enterprises in providing houses, mostly of four apartments. The total number of inhabited houses, 259,401, is 2,279 more than at Whitsunday a year before.



The following statement indicates the number of unoccupied houses during recent years compared with the respective numbers in the pre and post-war years, 1913 and 1921:—

NUMBER OF UNOCCUPIED HOUSES CLASSIFIED ACCORDING  
TO NUMBER OF APARTMENTS.

				Old City.		Extended City.		
				1913	1921	1928	1929	1930
One apartment,	...	...	...	4,169	33	54	125	204
Two apartments,	...	...	...	9,762	17	27	162	324
Three	"	...	...	2,731	9	33	198	494
Four	"	...	...	954	8	46	163	498
Five	"	and up,	...	1,094	76	213	477	759
				18,710	143	373	1,125	2,279

The total empty houses, 2,279, at Whitsunday, 1930, although double the number for the preceding year, contains 204 one-apartment houses and 759 houses of five apartments and upwards, which together represent almost 50 per cent. of the total, while a considerable number of the others are either uninhabitable houses or of the older type.

*Linings Granted by Dean of Guild Court.*—A summary of the linings granted by the Dean of Guild Court since 1918 is given in Appendix Table III. Building operations had been stopped during 1916, when linings for only 16 houses were granted. During 1930, linings to the number of 4,191 were granted, compared with 3,456 during the preceding year, but even the former figure is considerably lower than the average of between 6,000 and 7,000 for the three preceding years of 1926–28. These numbers, more or less, indicate the activities of the Corporation, and the smaller number of linings granted for the year to 31st August, 1930, may to a certain extent be due to the fact that private enterprise is now more active just outside the city boundary. Of the total linings granted, 506 were for two-apartment houses and 1,958 for three-apartment houses.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS.

The total rainfall during 1930, at less than 43 inches, is still below the average for the preceding ten years. As was the case in the preceding year, the early months were dry and cold, anti-cyclonic conditions prevailing more or less during the months of February and March. The average temperature in February was only 34° F. with a minimum of 20° F., the lowest recorded during the year, followed by 21° F., the minimum during March, which was also a cold month. The average over the year, 47·7° F., is above the mean of recent years. These conditions were associated with a dry and frosty spell of weather, when rain was recorded on only eight days in February, during the whole of which month the total rainfall was little more than a quarter of an inch. In the first six months of the year, the total rainfall only slightly exceeded 14 inches, whereas in August alone nearly half this amount (6·52 inches) was recorded.



The total hours of bright sunshine numbered 1,022, or 201 hours short of the number recorded in 1929, which, however, was well above the average for recent years. Almost half the total in 1930 was registered during the second quarter of the year. There were only six hours' sunshine during the month of December.

### CENTRAL HEALTH LECTURES.

During the winter of 1930-31, the Corporation Health Committee again co-operated with the Glasgow Burgh Insurance Committee, the Scottish Committee, and the Glasgow Branch of the British Social Hygiene Council, in the organisation of lectures on health subjects of interest to the public generally and especially to those interested in social welfare. The lectures were given in the M'Lellan Galleries, and on each occasion the opportunity was taken to show instructive films on health subjects. The following are the particulars of the course, which was attended by about 4,900 persons:—

Date, 1930.	Title of Lecture.	Lecturer.	Estimated Attendance.
Oct. 28	"The New Health Organisation"	Dr. A. S. M. Macgregor	850
Nov. 18	"Clothes and Health" ... ..	Dr. J. L. Halliday ...	850
Dec. 9	"The Diseases we pass on to Posterity."	Dr. James Dunlop ...	850
1931			
Jan. 20	"The Racial Effects of Alcohol" ...	Prof. F. A. E. Crew ...	800
Feb. 10	"The Problems of Infant and Ma- ternal Mortality."	Prof. Dame Louise M'Iloy	800
Mar. 3	"Biology and Disease" ... ..	Prof. J. Graham Kerr ...	750
			<hr/> 4,900 <hr/>

### LEGISLATION.

During the year the following Acts of Parliament and Regulations dealing directly with Public Health, or having a bearing thereon, came into operation:—

#### ACTS OF PARLIAMENT, 1930.

- (1) Adoption of Children (Scotland) Act, 1930.
- (2) Illegitimate Children (Scotland) Act, 1930.
- (3) Education (Scotland) Act, 1930. Milk to school children.
- (4) Housing (Scotland) Act, 1930.
- (5) Public Works Facilities, 1930.
- (6) Road Traffic, 1930.
- (7) Workmen's Compensation (Silicosis and Asbestosis), 1930.

#### CIRCULARS, ORDERS, REGULATIONS, &C., ISSUED DURING 1930.

##### *Housing.*

Circular (Explanatory) No. 27, dated 3rd September, 1930: Housing (Scotland) Act, 1930.

No. 951, dated 17th November, 1930: Housing (Scotland) Acts (Forms of Orders and Notices) Regulations.

*Food and Drugs.*

- Regulations (Provisional), dated 16th May, 1930: Public Health (Scotland), Meat.
- Regulations (Provisional), dated 16th May, 1930: Public Health (Scotland), Imported Food.
- Circular No. 21, dated 7th March, 1930: Food (Nutrition, Supervision of the Food Supply, &c., &c.).
- Regulations (Provisional), dated 16th May, 1930: Public Health, Condensed Milk (Regulations), Scotland, 1930.
- Regulations (Provisional), dated 16th May, 1930: Public Health, Dried Milk (Regulations), Scotland, 1930.
- Order No. 26, dated 17th January, 1930: Therapeutic Substances (Catgut) Regulations, 1930.
- Regulations No. 832, dated 31st October, 1930: Methylated Spirits (Customs and Excise).
- Notice No. 53, dated November, 1930: Sale of Industrial Methylated Spirits for Medical and Scientific Purposes by Wholesale Chemists and Dispensing Chemists.

*Tuberculosis.*

- Circular No. I.D. 27, dated 12th May, 1930: Treatment of Tuberculous Ex-Service Men.
- Memo. No. T.B. 3 dated April, 1930: Arrangements for the provision of residential treatment and other services relating to Tuberculous Ex-Service Men in Scotland so far as chargeable to the Ministry of Pensions.

*Infectious Disease.*

- Regulations No. 1123/ S. 64, dated 20th December, 1930: Public Health (Chickenpox) Amendment Regs. (Scotland), 1930.
- Circular No. 1081, dated 11th February, 1930: Psittacosis. Ministry of Health.
- Memo. No. 151, Med., dated 11th February, 1930: Psittacosis. Prevalence and Characteristics of the Disease.
- Circular No. I.D. 26, dated 28th April, 1930: Parrots (Prohibition of Import) Regulations (Scotland), 1930.
- Order No. 295/S. 15, dated 25th April, 1930: Parrots (Prohibition of Import) Regulations (Scotland), 1930.

*Maternity, Child Welfare, and Education.*

- Circular No. 31, dated 8th October, 1930, issued by Department of Health (Scotland): Supply of Milk to School Children.
- Joint Memo. by Scottish Education Dept. and Department of Health (Scotland), dated 30th October, 1930, on Supply of Milk to School Children.
- Joint Memo. by Scottish Education Department and Department of Health (Scotland), dated 1st September, 1930: Children under School Age.

*Diseases of Animals.*

Order No. 785, dated 19th September, 1930: Foot and Mouth Disease. Treatment of Contacts with Serum.

*Miscellaneous.*

Order No. 1095, dated 23rd December, 1930: Various Industries (Silicosis) Amendment. Scheme of Compensation.

Circular No. 1133, dated 25th July, 1930: Gas Poisoning.

Model Bye-laws for Public Abattoirs in Burghs, issued by Scottish Office and Department of Health for Scotland, 1930.

Aliens Order, 1920: Instructions to Medical Inspectors issued by Department of Health (Scotland), dated March, 1930.

Order No. 323, dated 12th May, 1930: Public Health. Sanitary Inspectors' Qualifications (Scotland).

Order No. 1026/S. 58, dated 8th December, 1930: Local Government (Scotland) (Adaptation of Enactments) Order, 1930.

Explanatory Memo. (1930) *re* above.

## BLIND PERSONS ACT.

In the Annual Report for last year a full account was given of the origin and management of the special clinic for certification of blind persons. During the months following upon its inception the majority of the persons examined were applicants for Government pensions and were over fifty years of age. During 1930 the scope of the clinic was extended so that it has now become the nucleus of all welfare activity in connection with blind persons residing in Glasgow and the South-west of Scotland.

Special arrangements have been made for informing the various bodies who are concerned with the administration of the Blind Persons Act of the results of the examinations carried out at the clinic.

## GOVERNMENT PENSIONS AND FREE WIRELESS LICENCES.

The voluntary agencies are supplied with all information regarding the results of certifications carried out at the clinic and communicate these results to the Central Government Department for the purpose of pensions and free wireless licences.

## EDUCATION COMMITTEE.

Before the passing of the Local Government Act applicants for blind training were examined by a medical officer of the Education Authority. Applicants residing in Glasgow are now referred by the Director of Education to the Medical Officer of Health for examination at the certifying clinic. At the time of examination of such applicants the ophthalmologists are asked to express an opinion as to the mentality and physical suitability of the applicant to receive training. The results of the examination at the clinic are forwarded to the Director of Education.

## PUBLIC ASSISTANCE COMMITTEE.

Additional financial assistance to blind persons is provided through the Public Assistance Committee. Persons whose names are on the Public Assistance register and who are certified to be blind receive additional monetary assistance up to a maximum of five shillings above the ordinary scale. The names of persons applying for this extra relief are forwarded by the Director of Public Assistance to the Medical Officer of Health, who, after each session of the clinic, returns a list containing the names of those certified and those refused.

## TRANSPORT COMMITTEE.

The privilege of free travelling on tramway cars has been granted by the Transport Committee to blind persons residing within Glasgow. The names of applicants for free passes are forwarded to the Medical Officer of Health for examination, and the decision of the certifying clinic is accepted by the Transport Committee.

*Blind Register.*—The register of blind persons, which was formerly kept by the Department of Health for Scotland, is now in the hands of the General Manager of the Joint Committee.

*Persons whose Names were Registered.*—Previously the names of persons on the register were derived mainly from Education Authorities and from voluntary agencies, who were made aware of all applicants for blind pensions. The information which is now supplied to the clinic by the Public Assistance Committee and by the Transport Committee is resulting in the discovery of a considerable number of blind persons who had not been hitherto registered, *e.g.*, during 1930, for Glasgow alone 336 applicants' names were forwarded by the Public Assistance Committee, and of these 158 were certified to be blind; the Transport Committee forwarded the names of 56 applicants, and among these were 13 previously unregistered blind persons. It is obvious that the old register of the blind was far from complete.

*Work of the Certifying Clinic.*—During the year 1930, 1,047 applicants were examined at the clinic and 119 at their homes, a total of 1,166. Of these 727, or 62·4 per cent., were certified as blind within the meaning of the Blind Persons Act.

The age and sex distribution of the applicants is shown in Table No. I. It will be noticed that 830 of the candidates, *i.e.*, 71 per cent., were over 50 years of age, as compared with 74 per cent. during 1929.

TABLE I.

SHOWING THE AGE AND SEX INCIDENCE OF APPLICANTS CLAIMING TO BE BLIND, EXAMINED AT THE CERTIFYING CLINIC DURING THE YEAR 1930.

	Ages—Certified.			Ages—Rejected.		
	Males.	Females.	Total.	Males.	Females.	Total.
1- 5	2	2	4	1	2	3
5-15	10	6	16	9	2	11
15-20	11	11	22	7	5	12
20-50	114	74	188	41	37	78
Over 50	242	255	497	184	151	335
	379	348	727	242	197	439

Table No. II. illustrates the number of applicants from each district in the area of the Joint Committee. It will be noted that 755, that is, 65 per cent. of the applicants, reside in Glasgow.

TABLE II.

SHOWING THE ALLOCATION OF THE APPLICANTS EXAMINED DURING 1930 AT THE CERTIFYING CLINIC AMONG THE LOCAL AUTHORITIES COMPOSING THE JOINT COMMITTEE FOR THE BLIND FOR GLASGOW AND THE SOUTH-WEST OF SCOTLAND.

	Certified.			Rejected.			Total Applicants
	Males.	Females.	Total.	Males.	Females.	Total.	
Glasgow ... ..	269	249	518	137	100	237	753
Airdrie ... ..	5	2	7	9	8	17	24
Ayr ... ..	1	4	5	1	—	1	6
Coatbridge ... ..	13	6	19	18	15	33	52
Dumbarton ... ..	3	2	5	—	1	1	6
Dumfries ... ..	2	3	5	—	2	2	7
Falkirk ... ..	2	1	3	1	—	1	4
Greenock ... ..	9	9	18	13	13	26	44
Hamilton ... ..	5	4	9	4	2	6	15
Kilmarnock ... ..	1	2	3	1	—	1	4
Motherwell and Wishaw ... ..	5	5	10	6	10	16	26
Paisley ... ..	8	6	14	4	6	10	24
Port-Glasgow ... ..	2	1	3	2	1	3	6
Stirling ... ..	3	—	3	1	1	2	5
Argyllshire ... ..	5	1	6	2	3	5	11
Ayrshire ... ..	7	6	13	2	—	2	15
Buteshire ... ..	—	1	1	—	—	—	1
Lanarkshire ... ..	25	23	48	33	27	60	108
Renfrewshire ... ..	2	7	9	—	1	1	10
Stirlingshire ... ..	3	4	7	—	5	5	12
Dunbartonshire ... ..	9	12	21	8	2	10	31
Total ... ..	379	348	727	242	197	439	1,166

Recommendations for treatment made at the clinic were as follows:—

	Cases Certified.	Cases Refused.
Medical Treatment ... ..	30	34
Surgical Treatment ... ..	47	32
Spectacles ... ..	7	60
	<u>84</u>	<u>126</u>

Of the 439 applicants refused certification, 126, that is, 28·7 per cent., were recommended treatment in some form.

*Wassermann Results.*—Of the cases examined and certified at the clinic, specimens of blood were taken for Wassermann examination in 396 instances. The number giving positive results was 54, which is 13·7 per cent.

*Re-examinations.*—The number of applicants examined for the second time during the year was 75. In 73 cases re-examination was done on the recommendation of the examining ophthalmologist to ascertain either the effect of treatment advised, for example, cataract operation, or the change in six months or a year in a case which is



progressively deteriorating. The alteration in the surgeons' certificate, as the result of re-examination, was as follows:—

(a) Certified blind on first examination and decision unaltered on re-examination, ... ..	6
(b) Certified blind on first examination and decision reversed on re-examination, ... ..	6
(c) Certified not blind on first examination and decision unaltered on re-examination, ... ..	44
(d) Certified not blind on first examination and decision reversed on re-examination, ... ..	17

The remaining two cases were re-examined at the request of the Department of Health: both were originally certified not blind, and on re-examination the decision was not changed.

*Causes of Blindness.*—The causes of blindness may be classified as follows:—

#### CAUSES OF BLINDNESS, 1930.

##### *Congenital and Undetermined Causes.*

Congenital and Developmental Defect ... ..	46
Ophthalmia Neonatorum ... ..	23
Local Infection ... ..	23
Tumor ... ..	2
Cataract ... ..	99
Myopia ... ..	132
Glaucoma ... ..	53
	<hr/>
	384

##### *Infectious and Toxic.*

Syphilis ... ..	89
Gonorrhœa ... ..	4
Trachoma ... ..	6
Exanthemata and Measles ... ..	18
Septic Acute ... ..	4
Septic Chronic ... ..	74
Toxic ... ..	3
Strumous ... ..	18
Tuberculosis ... ..	9
	<hr/>
	215

##### *Injuries.*

Casual ... ..	18
Industrial ... ..	30
War ... ..	...
Birth ... ..	1
	<hr/>
	49

##### *Intracranial.*

Cerebral Vascular ... ..	...
Cerebral Neoplasm ... ..	10
Hydrocephalus and Meningitis ... ..	13
Fractured Skull ... ..	2
	<hr/>
	25

##### *General Diseases.*

Anæmia ... ..	...
Diabetes ... ..	5
Nephritis ... ..	2
Arterio Sclerosis ... ..	18
Pregnancy ... ..	3
	<hr/>
	28

<i>Others</i> ... ..	...
	<hr/>
	26

Total ... ..	...
	<hr/>
	727

The total number of cases, 727, is statistically too small to permit of much discussion. It is worthy of mention, however, that in this series the most important cause of blindness is myopia, 132 cases, or 18·1 per cent., while the venereal diseases, syphilis and ophthalmia neonatorum, come second with 112 cases, or 15·4 per cent. The third greatest group is constituted by cataract, 99 cases, or 13·6 per cent. The number of cases in which blindness was due to injury was only 49, or 6·7 per cent., which is approximately a third of the rate for injuries given in the report on blindness in Glasgow, 1926, by Drs. Freeland Fergus and Halliday. Another statistical enquiry into the causes of blindness has been begun, and the results will be published later.

## REORGANISATION OF HEALTH SERVICES.

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### LOCAL GOVERNMENT (SCOTLAND) ACT, 1929.

The Local Government Act provides for the transference to the Corporation of the services formerly carried on by the Education Authority, the Parish Councils, and the Boards of Control of Glasgow and Govan. The area of administration for these purposes is now coterminous with the city boundary.

In so far as the Act applies to the medical services thus transferred, unification under the Committee on Health has been attained under the administrative scheme prepared by the Corporation, which has received the sanction of the Secretary of State for Scotland, in terms of Section 14 of the Act. The actual transference of functions took place on 15th May, 1930, on which date the administrative scheme came into operation. The new duties thus added to the Health Committee and the Health Department comprised briefly (a) the medical inspection and treatment of school children (with certain qualifications), now renamed the "Education Health Service"; (b) the medical services of the Poor Law Authority, including hospitals for the treatment of the sick requiring continuous medical care and nursing, along with the outdoor medical staff; and (c) the mental hospitals formerly administered by the Boards of Control. Following upon the adoption and approval of this policy it became necessary to reorganise the Health Department, in order to carry on the added functions and to effect such unification with existing services as seemed essential.

Thus, two successive steps were involved in putting into force the measures required to give effect to the Local Government Act. These were (1) the scheme of administrative arrangements made by the Corporation under the provision of Section 14 of the Act; and (2) the scheme of reorganisation of the Health Department. As these schemes represent the basis on which the reorganised and unified Department will operate from now on, they are given in full, as under:—

SCHEME FOR THE ADMINISTRATION OF THE FUNCTIONS OF THE  
CORPORATION OF THE CITY OF GLASGOW RELATING TO (a)  
EDUCATION, (b) POOR LAW, (c) PUBLIC HEALTH, AND (d)  
LUNACY AND MENTAL DEFICIENCY.

*Title of Scheme.*

1. This Scheme of Administrative Arrangements made under the provisions of Section 14 of the Local Government (Scotland) Act, 1929, may be cited as the "Glasgow Scheme for the Administration of Functions relating to (a) Education, (b) Poor Law, (c) Public Health, and (d) Lunacy and Mental Deficiency," and shall have effect as from the 16th day of May, 1930.

*Definitions.*

2. In the Scheme the following words and expressions have, unless there be something in the subject or context repugnant to such construction, the meanings hereby assigned to them (that is to say):—

"Act" means the Local Government (Scotland) Act, 1929.

"Corporation" means the Corporation of the City of Glasgow.

"Transferred functions" means powers and duties transferred to the Corporation by Part I. of the Act.

Other words and expressions have the same meanings as are assigned to them in the Act.

*Application of Interpretation Act, 1889.*

The Interpretation Act, 1889, shall apply to the interpretation of this Scheme as it applies to the interpretation of an Act of Parliament.

*Committees.*

The Education Committee constituted in accordance with the Scheme made by the Corporation in terms of Section 12 of the Act, dated 19th December, 1929, and approved by the Scottish Education Department on 8th April, 1930, shall be the committee for the administration of the functions hereinafter referred to that committee.

There shall be appointed on or before 16th May, 1930, and thereafter annually by the Corporation at the Statutory Meeting of the Corporation to be held in terms of Section 58 of the Town Councils (Scotland) Act, 1900, on the Friday immediately succeeding the day of the annual election, committees to be called respectively the "Health Committee" and the "Public Assistance Committee," for the administration of the functions hereafter referred to them respectively.

The Health Committee shall consist of 37 members of the Corporation, with the addition of the Lord Provost of the City *ex officio*, or of such number of members as the Corporation may from time to time determine.

The Health Committee shall annually appoint a standing sub-committee, to be composed of members of that committee, for the purpose of administering the Lunacy and Mental Deficiency Acts,

so far as the functions under these Acts are referred to the Health Committee.

The Public Assistance Committee shall consist of 37 members of the Corporation, with the addition of the Lord Provost of the City *ex officio*, or of such number of members as the Corporation may from time to time determine.

Any Public Assistance Committee appointed within one year of the 3rd December, 1929, shall in addition have appointed to it by the Corporation five members of the outgoing Parish Councils within the City, not being members of the Corporation—such members to hold office until 2nd November, 1931.

Any vacancy occurring among the members appointed from the outgoing Parish Councils shall be filled as soon as may be by the appointment by the Corporation of another member of the outgoing Parish Councils.

The Corporation before exercising any function relating to a matter referred by this Scheme to any of the foregoing committees shall, unless in their opinion the matter is urgent, receive and consider the report of the appropriate committee with respect to the matter in question.

The Corporation may from time to time by minute and with the approval of the Secretary of State vary, add to, or restrict the terms of the references hereunder.

#### *Reference to Education Committee.*

Subject to the provisions of the Act and of this Scheme and except as aftermentioned, there shall stand referred to the Education Committee all matters relating to the exercise of the functions of the Corporation as to education, including, *inter alia*, without prejudice to the foresaid generality, the functions of the Corporation under the following Acts, *videlicet* :—

- (1) Education (Scotland) Acts, 1872 to 1928, and any Acts to be construed as one with these Acts (other than the functions thereunder referred to the Health Committee and the Public Assistance Committee);
- (2) Employment of Children Act, 1903;
- (3) The Children Act, 1908—Part IV.: Reformatory and Industrial Schools; and Section 122 (Cleansing of Verminous Children);
- (4) Mental Deficiency and Lunacy (Scotland) Act, 1913 (so far as under that Act the education and the care and supervision of defective children are placed upon an Education Authority);

and any Acts amending these Acts.

For the purpose of co-ordinating the services provided by the Corporation, there shall be excepted from the foregoing reference to the Education Committee



(1) The following matters hereinafter referred to the Health Committee and the Public Assistance Committee respectively, viz. :—

- (a) The medical inspection and treatment of children and young persons under the Education (Scotland) Acts, 1872 to 1928, including the appointment of the professional and specialist staff and such clerical staff as is required in the conduct of such inspection and treatment and the tabulation of results, which shall be referred to the Health Committee, subject to all arrangements for conducting the medical inspection in schools being made in consultation with the Education Committee and the details communicated to the schools by the appropriate official of the Education Department, through whom all arrangements will be made for hours of inspection, attendance of parents and scholars, and attendance of children at clinics for treatment, and subject also to copies of all reports to the Health Committee on the results of medical inspection being transmitted for the information of the Education Committee ;
- (b) The provision of clinics for the treatment of children and young persons and their control and staffing which shall be referred to the Health Committee, subject so far as the provision of such clinics is concerned to consultation with the Education Committee ;
- (c) The provision of residential institutional treatment for children and young persons which shall be referred to the Health Committee ; and
- (d) The investigations into family circumstances necessary for the carrying out of the relevant sections of the Education (Scotland) Acts in regard to the provision of books, boots, clothing, and food, which shall be referred to the Public Assistance Committee ; and

(2) The functions referred to other committees as mentioned under the heading " General Co-ordination " in this scheme.

The foregoing exception from reference to the Education Committee shall not include

- (1) Matters concerning individual children (including mentally defective, backward and delinquent children) and their best disposal and treatment (other than medical) in schools, whether ordinary or special ;
- (2) Physical education, instruction in hygiene ;
- (3) School construction and equipment ;

all of which matters shall stand referred to the Education Committee.

#### *Education Sub-Committees.*

(1) Subject to the provisions of the Act and of this Scheme the Education Committee may appoint sub-committees, which shall consist solely of members of the Committee.



(2) The terms of reference to the sub-committees shall be such as the Education Committee may specify from time to time, and, until altered by the Corporation, the following sub-committees, in addition to School Management Committees to be appointed in terms of Section 3 of the Education (Scotland) Act, 1918, shall be annually appointed by the said Committee :—

- (1) Teachers and Teaching ;
- (2) School Attendance ;
- (3) Property, Equipment, and Supplies ;
- (4) Finance and General Purposes ;
- (5) Continuation Classes ; and
- (6) School Welfare.

The membership of a sub-committee shall not exceed fifteen.

#### *Reference to Health Committee.*

Subject to the provisions of this Scheme and except as after-mentioned there shall stand referred to the Health Committee all the functions of the Corporation relating to Health matters, including, *inter alia*, and without prejudice to the foresaid generality, the functions of the Corporation under the following Acts and Orders, viz. :—

- Glasgow Police Act, 1866—Sections 245 to 251, 253 to 255, 262 to 266, 268 to 271, 348, and 378.
- Glasgow Police (Amendment) Act, 1890, except Sections 16, 30, 32, 33 (so far as relating to collection, removal, and disposal of City manure), 34 to 38, and 40 to 46.
- Glasgow Police (Further Powers) Act, 1892—Sections 31 and 37.
- Glasgow Corporation (Police) Order, 1901—Section 17.
- Glasgow Corporation (Police) Order, 1904—Sections 9 to 12 and 15.
- The Children Act, 1908—Section 122 (Cleansing of Verminous Children).
- Glasgow Corporation Order, 1918—Part II.
- Glasgow Corporation Order, 1919—Section 35.
- Glasgow Corporation Order, 1922—Section 40.
- Glasgow Corporation Order, 1923—Section 46.
- Glasgow Corporation Order, 1927—Section 70.
- Glasgow Corporation Order, 1929—Sections 33 and 34.
- Infectious Disease (Notification) Act, 1889.
- Public Health (Scotland) Acts, 1897 to 1907 (except Section 16 of the Act of 1897, so far as delegated to Housing Committee, and relative procedure sections).
- Poor Law (Scotland) Act, 1845, so far as relating to medical treatment and nursing of sick poor resident in the City area, including domiciliary treatment, subject to the submission to and approval by the Public Assistance Committee of the adequacy of the arrangements for carrying out said treatment.

Lunacy (Scotland) Acts, 1857 to 1919, and the Mental Deficiency and Lunacy (Scotland) Act, 1913, all so far as relating to medical examination and treatment, including the provision, administration, maintenance, and management of all institutions provided or to be provided by or under the control of the Corporation under these Acts.

Local Government (Scotland) Act, 1929—Sections 14 (4) (except feeding and clothing of school children), 27 and 29.

Notification of Births Acts, 1907 and 1915 (other than functions thereunder referred to the Public Assistance Committee).

Maternity and Child Welfare Act, 1918—Section 4.

Midwives and Maternity Homes (Scotland) Acts, 1915 and 1927.

Venereal Diseases Act, 1917.

The Cleansing of Persons Act, 1897.

Vaccination (Scotland) Acts. 1863 to 1907.

Anthrax Prevention Act, 1919.

Sale of Horse Flesh, &c., Regulation Act, 1889.

Public Health (Regulations as to Food) Act, 1907.

Sale of Food Order, 1921.

Milk and Dairies (Scotland) Act, 1914.

Milk and Dairies (Amendment) Act, 1922.

Bread Acts (Amendment) Act, 1922.

Merchandise Marks Act, 1926.

Food and Drugs (Adulteration) Act, 1928.

Agricultural Produce (Grading and Marking) Act, 1928.

Artificial Cream Act, 1929.

Rats and Mice (Destruction) Act, 1919.

Fertilisers and Feeding Stuffs Act, 1926.

Metalliferous Mines (Regulation) Act, 1872—Section 13.

Factory and Workshop Act, 1901—Sections 1 to 3, 5, 78, 97 to 102, 107 to 110, 125, 131 to 133, and 159, so far as regards sanitation and other health matters.

Alkali, &c., Works (Regulation) Act, 1906—Section 22.

Coal Mines Act, 1911—Section 26.

Smoke Nuisance (Scotland) Acts, 1857 and 1865.

Rivers Pollution Prevention Acts, 1876 and 1893.

Rag Flock Acts, 1911 and 1928.

Widows', Orphans' and Old Age Contributory Pensions Act, 1925—Section 41.

And any Acts amending and extending those Acts.

For the purpose of co-ordinating the services provided by the Corporation

(1) There shall also stand referred to the Health Committee:—

(a) The medical inspection and treatment of children and young persons under the Education (Scotland) Acts, 1872 to 1928, including the appointment of the professional and specialist staff and such clerical staff as is required in the conduct of such inspection and treatment and the tabulation of results, subject to all arrangements for conducting the medical inspection in

schools being made in consultation with the Education Committee and the details communicated to the schools by the appropriate official of the Education Department, through whom all arrangements will be made for hours of inspection, attendance of parents and scholars, and attendance of children at clinics for treatment, and subject also to copies of all reports to the Health Committee on the results of medical inspection being transmitted for the information of the Education Committee;

- (b) The provision of clinics for the treatment of children and young persons and their control and staffing, subject, so far as the provision of such clinics is concerned, to consultation with the Education Committee; and
- (c) The provision of residential institutional treatment for children and young persons; and

(2) There shall be excepted from the reference to the Health Committee the functions referred to other committees, as mentioned under the heading "General Co-ordination" in this Scheme.

#### *Health Sub-Committees.*

(1) Subject to the provisions of the Act and of this Scheme the Health Committee may appoint sub-committees which shall consist solely of members of the Committee.

(2) The terms of reference to the sub-committees shall be such as the Health Committee may specify from time to time, and, until altered by the Corporation, the following sub-committees shall be appointed by the said Committee, viz. :—

- (1) Institutions other than Mental;
- (2) Clinical Services;
- (3) Finance and Works;
- (4) Special Services; and
- (5) Mental Services.

The membership of a sub-committee shall not exceed fifteen.

#### *Reference to Public Assistance Committee.*

Subject to the provisions of the Act and of this Scheme, and except as aftermentioned, there shall stand referred to the Public Assistance Committee the functions of the Corporation relating to Poor Law, including, *inter alia*, without prejudice to the foresaid generality, the functions of the Corporation under the following Acts, viz. :—

The Poor Law (Scotland) Acts, 1845 to 1927 (other than functions referred to the Health Committee).

The Local Government (Scotland) Act, 1929, Section 28.

Lunacy (Scotland) Acts, 1857 to 1919, and the Mental Deficiency and Lunacy (Scotland) Act, 1913 (other than functions referred to the Education Committee and the Health Committee).

The Children Act, 1908, Part I., Section 12 (Punishment for cruelty to children and young persons); Section 34 (Institution of Proceedings, &c.); and Section 126 (Reception and maintenance of children and young persons).

The Burial Grounds Acts, 1855 and 1857, and the Cremation Act, 1902.

The Blind Persons Act, 1920, so far as relating to the giving of domiciliary assistance to blind persons.

And Acts amending and extending those Acts.

For the purpose of co-ordinating the services provided by the Corporation,

(1) There shall also stand referred to the Public Assistance Committee—

(a) The investigations into family circumstances necessary for the carrying out (1) by the Education Committee of the relevant sections of the Education (Scotland) Acts in regard to the provision of books, boots, clothing, and food, and (2) by the Health Committee of the distribution of milk and meals in connection with Child Welfare Schemes under the Notification of Births Acts; and

(b) The investigation of each case or class of case to which the Corporation have power to give assistance under any Act or Acts or in any capacity whatever, and the establishment and keeping of a single record of such cases; and

(2) There shall be excepted from the reference to the Public Assistance Committee the functions referred to other committees as mentioned under the heading "General Co-ordination" in this Scheme.

#### *Public Assistance Sub-Committees.*

(1) Subject to the provisions of the Act and of this Scheme the Public Assistance Committee may appoint sub-committees which shall consist solely of members of the committee.

(2) The terms of reference to the sub-committees shall be such as the Public Assistance Committee may specify from time to time, and, until altered by the Corporation, the following sub-committees shall be appointed by the said committee, viz.:—

- (1) General Purposes;
- (2) Boarding-out;
- (3) Institutions; and
- (4) Appeals.

The membership of a sub-committee shall not exceed fifteen.

For the purpose of dealing with applications for public assistance, the City shall be divided into districts.



A remit shall be made to individual members of the Public Assistance Committee to act on behalf of the committee in the consideration of all applications for public assistance, whether institutional or domiciliary. For this purpose, all members of the Public Assistance Committee shall act in rotation. One or more members shall attend each district each day, except Saturdays, Sundays, and public holidays. The members shall use their discretion in deciding whether assistance should be granted or refused, and, if granted, they shall give authority for monetary or other assistance within the limits of a scale previously determined from time to time by the Public Assistance Committee, and approved by the Corporation. They shall, if so required, remit a case to the appropriate sub-committee for decision.

Any decision given by a member in terms of said remit shall be subject to review by the Appeals Sub-Committee at the instance of the applicant, the member who considers the case, or the Director of Public Assistance.

#### *General Co-ordination.*

In the interests of co-ordination there shall be excepted from the functions hereinbefore referred to the Education Committee, the Health Committee, and the Public Assistance Committee, all functions relating to the raising of money by rate or loan and all functions or matters of administration which are common to the work of these committees and to other committees of the Corporation, and which may stand or may be referred to other committees, special or otherwise, appointed by the Corporation. In particular, the exceptions referred to include all functions relating to (a) the purchase and supply of stationery; (b) the placing of orders and contracts for printing; (c) the purchase of cloths for uniforms; (d) wages, salaries, and conditions of service; (e) superannuation (other than teachers to whom the Education (Scotland) (Superannuation) Act, 1919, applies); and (f) fire insurance.

Notwithstanding such exceptions from the aforesaid references, the Education Committee, the Health Committee, and the Public Assistance Committee shall be respectively entitled to confer or consult with or make representations to any committee dealing with the excepted functions.

#### *Standing Orders.*

The Education Committee, the Health Committee, and the Public Assistance Committee, in carrying out the functions referred to them, shall observe and comply with the Standing Orders of the Corporation and with any resolutions, directions, or instructions passed or to be passed by the Corporation in relation to its business generally or to the aforesaid references.

#### *Assistance Alternative to that under the Poor Law.*

(1) So soon as a scheme under Section 27 (1) of the Local Government (Scotland) Act, 1929, for the re-organisation of the hospital facilities at the disposal of the Corporation has been approved by the Department of Health as provided for under said Section, the following assistance, which may be given either by way of Poor



Relief or under Statutes other than Poor Law Acts, shall cease to be provided under the Poor Law Acts, and shall be provided exclusively under the respective Statutes undermentioned, that is to say—

- (a) The maintenance and treatment of persons suffering from infectious disease shall be provided exclusively under the Public Health Acts; and
  - (b) The maintenance and treatment of sick persons, that is to say, persons requiring continuous medical treatment and nursing, and whose area of settlement is the City, shall be provided exclusively under and by virtue of said Act of 1929, and also under the Public Health (Scotland) Amendment Act, 1925.
- (2) The following assistance shall be provided exclusively under the Blind Persons Act, 1920 :—
- (a) The provision of domiciliary assistance to unemployed blind persons; and
  - (b) The provision of assistance towards maintenance of blind persons during elementary or technical education in an institution and contributions to an institution in respect of employed blind persons.

*Clerk and Law Agent.*

The Town-Clerk shall act as Clerk, Legal Adviser, and Law Agent to the Education, Health, and Public Assistance Committees.

*Treasurer.*

Any financial duties connected with said committees shall be undertaken by or carried out under the direction of the City Chamberlain.

*Medical Officer of Health.*

The Medical Officer of Health shall be the Principal Medical Officer of the Corporation, and shall be responsible to the Corporation and to the Education, Health, and Public Assistance Committees for the due administration of all medical functions standing referred to said committees. He shall have control of the Public Health Department of the City and under the authority of the Health Committee and the Corporation shall direct the operations of said department, and supervise and control the various medical and nursing staffs under said committee, in accordance with the Scheme for the re-organisation of the Health Department approved by the Corporation on 13th May, 1920.

*Sanitary Inspectors.*

The Sanitary Inspectors shall act under the superintendence, direction, and control of the Medical Officer of Health, and shall be responsible to him and to the Assistant Medical Officers of Health in their respective divisions, for the performance of all duties assigned to them, in accordance with the scheme for the re-organisation of the Public Health Department approved by the Corporation on 13th May, 1920, and the regulations for Sanitary Inspectors made by the Corporation on 21st October, 1920, and approved by the Scottish Board of Health on 23rd December, 1920.

*Veterinary Surgeon.*

The Veterinary Surgeon shall, in accordance with the scheme for the re-organisation of the Public Health Department approved by the Corporation on 13th May, 1920, and regulations to be made, in terms of Section 3 (5) of the Milk and Dairies (Scotland) Act, 1914, regarding the duties of the Veterinary Surgeon and his relations to the other officers of the Local Authority, be subject to the general direction of the Medical Officer of Health in matters of policy affecting the work of the department, but, as regards executive functions for which he is statutorily responsible, shall be directly responsible, to the Corporation and the Health Committee for the administration of those functions.

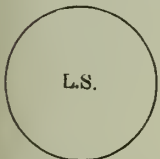
*Executive Officer and Director of Education.*

The Corporation may appoint one or more principal officials who shall, under the control and supervision of the Corporation and the Education Committee, be responsible for the administration of the Department of Education. The Education Committee shall draw up and submit to the Corporation for approval a statement of the duties to be performed by such officers.

*Director of Public Assistance.*

The Corporation shall appoint a Director of Public Assistance to act as the administrative head of the Public Assistance Department for the City under the control and supervision of the Corporation and the Public Assistance Committee. The Director of Public Assistance shall be appointed Inspector of Poor, and shall as such carry out the duties placed upon an Inspector of Poor, under the Poor Law Acts, the Lunacy and Mental Deficiency Acts, and any other Acts. The Public Assistance Committee shall draw up and submit to the Corporation for approval a statement of the duties to be performed by the Director of Public Assistance other than the statutory duties appertaining to his office as Inspector of Poor.

The foregoing Scheme was made at a meeting of the Corporation, held on 20th March, 1930, and authority then given for the signing and sealing of the same.

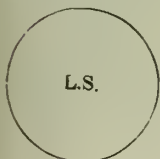


JAMES DUNLOP, *Councillor.*

JOHN M. KERR, *Councillor.*

D. STENHOUSE, *Town-Clerk.*

Approved by the Secretary of State as amended.



(Sgd.) WALTER HOGG,

*Assistant Secretary.*

SCOTTISH OFFICE, WHITEHALL,  
10th June, 1930.

## SCHEME OF RE-ORGANISATION OF HEALTH SERVICES.

The scheme of administrative arrangements made by the Corporation, under the provisions of Section 14 of the above Act, provides for the transfer of the following services to the Corporation and the Health Committee and its Sub-Committees, viz. :—

(1) *To the Sub-Committee on Institutions.*—Stobhill Hospital and the Eastern and Western District Hospitals of the Glasgow Parish Council, and the dispensary and domiciliary services at present provided by the Glasgow, Govan, and other Parishes within the City, as also Dunclotha Home, Dunoon, and Stewart Hall Convalescent Home, Rothesay.

(2) *To the Mental Services Sub-Committee.*—Gartloch, Woodilee and Hawkhead Mental Hospitals, and Stoneyetts (including Blink-bonny Home), Lennox Castle, and Caldwell House Institutions for Mental Defectives, as well as the medical examination of lunatics and mental defectives.

(3) *To the Sub-Committee on Clinical Services.*—The medical inspection and treatment of school children and young persons.

The following summary indicates the magnitude of the new duties and responsibilities involved in these transferred services :—

<i>General Hospitals.</i>				<i>Beds.</i>	<i>Staff.</i>
Stobhill Hospital,	...	...	...	1,709	693
Eastern District Hospital,	...	...	...	314	122
Western District Hospital,	...	...	...	224	93
Dunclotha Convalescent Home,	...	...	...	43	10
Stewart Hall Convalescent Home,	...	...	...	25	2
				—2,315	— 920
<i>Mental Hospitals.</i>					
Gartloch,	...	...	...	826	265
Woodilee,	...	...	...	1,285	340
Hawkhead,	...	...	...	873	201
				—2,984	— 806
<i>Institutions for Mental Defectives.</i>					
Stoneyetts,	...	...	...	345	75
Lennox Castle,	...	...	...	113	35
Caldwell House,	...	...	...	105	17
				— 563	— 127
<i>Education Medical Service.</i>					
Medical, nursing, &c., staffs (say)	...	...	...	—	100
				<u>5,862</u>	<u>1,953</u>

Some clerical and other administrative staff may fall to be transferred, so that the total number will be approximately 2,000. Table I. appended hereto gives some further details regarding the institutional staffs transferred.

Besides the institutions enumerated above, the Committee will have an interest, to the extent of one-half (133 beds) in Kirklands Mental Hospital, which at present is administered by a Joint Committee representative of the Govan and Lanarkshire Lunacy District Boards. It is also proposed that a joint arrangement be made with the Public Assistance Committee in regard to the use of the hospital section of the Southern General Hospital (about 600 beds).

A further important administrative function will fall to be undertaken in connection with the scheme for the re-organisation of the hospital facilities of the Corporation under Section 27 of the Act, whereby the scope of institutional treatment will be widened to include not only the sick poor but sick persons residing in the City who require institutional treatment involving continuous medical care and nursing. These enlarged responsibilities will give rise to numerous difficult administrative problems.

#### SCHEME OF RE-ORGANISATION.

Careful consideration has been given to the manner in which these services can best be controlled and correlated with each other and with the existing functions of the Department, and how they may be co-ordinated with the functions of the Education and Public Assistance Committees on their medical side. Broadly speaking, the unified services will fall naturally into four main branches, viz.:—

(1) It will be desirable to link up the Education Health Service with Maternity and Child Welfare into a single unit for administrative purposes. These two services merge into one another and much of the work to be undertaken is common to both. The two broad subdivisions into which this branch naturally falls would remain, dovetailed into one another where necessary, as, for instance, in the Clinic systems and in continuity of supervision and records.

The Maternity and Child Welfare services need not be mentioned in detail. Consideration has, however, been given to the increasing duties required by the Maternity service, such as the investigation into maternal deaths, the administration of the Puerperal Pyrexia Regulations, the registration of maternity homes, and the supervision of midwives. The question of making special arrangements for the administration of this branch may be deferred meantime, in view of possible fresh legislation and the further development of the Maternity Scheme of the Corporation.

As regards medical inspection and treatment of school children, the estimated work for the coming year involves 143,000 routine and special examinations, and the attendance at Clinics of approximately 63,000 children. There are on the staff of the Education Authority fourteen medical officers, including the Principal Medical Officer and his Deputy, along with eight part-time specialist officers and eight dentists, two of whom are part-time officers. Medical supervision extends to 5,210 mentally and physically defective children, while there will be a number of other duties to be performed on behalf of the Education Committee. Seventy-two nurses are employed in various capacities.



(2) The mental services, both institutional and out-door, obviously form a single and highly specialised unit. This branch will be charged with the control of the mental institutions (comprising over 3,500 beds), the arrangements for certification and admission of patients, and their allocation as between the mental wards of the hospitals and the mental institutions. It will correlate the medical administration of the Poor Law in relation to mental defect, the Lunacy and Mental Deficiency Acts, and the Children Act with reference to mental deficiency. A continuous survey of the incidence of mental defect in association with the Education mental service will also be required. There will also arise the question of the Psychological Clinic for such early treatment and preventive work as may seem feasible.

NOTE.—In the circular of the General Board of Control dealing with this service, its highly technical character and the manifold nature of the problems of lunacy and mental deficiency were pointed out. It may be regarded as essential that the officer in charge of this branch should possess skilled knowledge of mental diseases, and should probably exercise certain clinical functions as part of his duties.

(3) It will be desirable to administer as one unit the General Hospitals along with the out-door medical services for the sick poor, as the administration of the former will be determined by the needs of the latter. This will involve correlation of the medical services under the Poor Law Acts with those required under the Local Government Act. General hospital provision, as distinct from that for infectious diseases, will also be related to the treatment of sick persons generally. There will be included in this branch the three General Hospitals—Stobhill and the Eastern and Western District Hospitals—and the hospital section of the Southern General Hospital, with an aggregate of about 3,000 beds (including two Convalescent Homes); the out-door medical services, including certification and treatment, employing some twenty-five or thereby part-time officers, whose duties are at present conducted at about ten centres. The administration of these general medical services would include the re-organisation of the out-door clinics and the re-arrangement of institutional facilities, and will involve questions not only of local but also of regional facilities for special purposes, along with surveys of the incidence of disease generally and provision for treatment.

(4) There remains the Public Health service as it at present stands. This includes general sanitation; housing and slum clearance; control of infectious diseases; the infectious diseases hospitals; the schemes for the administration of tuberculosis and venereal diseases, comprising hospital provision amounting to approximately 3,000 beds; the work of the Port Local Authority; food inspection, air purification, and other branches.

#### PROPOSED STAFFING ARRANGEMENTS.

Considering these four branches of the Department, their relative magnitude and scope, and their efficient conduct, and keeping in view future developments and the enquiries and research that will be



necessary, the following proposals in regard to administrative staff are submitted, namely:—That there should be appointed:—

- (1) A Senior Deputy Medical Officer of Health;
- (2) A Deputy Medical Officer of Health for Education Health Services and Maternity and Child Welfare;
- (3) A Deputy Medical Officer for Mental Services;
- (4) A Deputy Medical Officer for General Hospital and Outdoor Medical Services; and
- (5) Four Senior Assistant Medical Officers.

The duties proposed to be allotted to these several officers may be set out as follows:—

(1) *Senior Deputy Medical Officer of Health.*—This officer will be placed in charge of the general Public Health services of the Department, and act as Senior Deputy to the Medical Officer of Health. His duties will include the co-ordination of the work of the Public Health Divisions as regards sanitation and infectious diseases; infectious diseases hospitals and disinfecting stations; hospital construction; food and milk inspection; air purification; the work of the Port Local Authority; and housing and slum clearance.

(2) *Deputy Medical Officer of Health for Education Health Services and Maternity and Child Welfare.*—This officer will administer the School Medical and Maternity and Child Welfare services combined. His duties will include, in co-operation with the Education Committee and its appropriate official, the organisation and control of the scheme for the routine medical inspection and treatment of school children; supervision of the various general and special clinics associated with these services; the medical services required in respect of mentally and physically defective children; medical functions in relation to such questions as physical education, instruction in hygiene, school construction and equipment, &c. He will also maintain a general supervision over the Maternity and Child Welfare scheme of the Corporation. In addition, he will undertake such duties as may be necessary to secure co-ordination between the Public Health and Education Health services.

(3) *Deputy Medical Officer for Mental Services.*—This officer will be responsible for the services administered by the Sub-Committee on Mental Services. These will include control of the mental institutions, with approximately 3,500 inmates; arrangements for the medical examination of patients requiring admission for observation or certification for admission to mental institutions; general supervision of existing mental observation wards in the various hospitals; psychological clinics and such psychological work as may arise in connection with the general medical services of the Corporation; organisation of after-care; and co-ordination with the functions of the Education Committee as regards mentally defective children, and with the Public Assistance Committee, both as regards lunatics and mental defectives.

(4) *Deputy Medical Officer for General Hospital and Out-door Medical Services.*—This officer will be in charge of the general hospitals and the out-door general medical services, including the organisation and conduct of the out-door and domiciliary medical services, classification of patients in general hospitals and re-arrangement of the accommodation therein; control of admissions to general hospitals, control of medical services under the Blind Persons Act administered by the Joint Committee, administration of the scheme for the treatment of sick persons (excluding infectious diseases) under Section 27 of the Local Government (Scotland) Act, 1929, co-ordination of the hospitals of the Local Authority with the work of the voluntary hospitals, and the organisation of the training of nurses. He will also undertake such duties as may be necessary to effect co-ordination of the foregoing services with the work of the Education and Public Assistance Committees and the Joint Committee administering the Blind Persons Act.

(5) *Four Senior Assistant Medical Officers.*—(I.) One of these officers will, under the direction of the Senior Deputy Medical Officer of Health, undertake the executive supervision of the tuberculosis and venereal diseases schemes of the Corporation, including the allocation of patients to appropriate institutions, and the supervision of the various clinics and of Baird Street Auxiliary Hospital.

(II.) A second Senior Assistant Medical Officer will assist the Senior Deputy Medical Officer of Health in his general duties, such as the control of infectious diseases, admission of patients to fever hospitals, co-ordination with the pathological services, special investigations, and slum clearance and re-housing schemes.

(III.) A third Senior Assistant Medical Officer will be required to assist the Deputy Medical Officer for general hospital and out-door medical services in carrying out the details of administration in connection with the classification of patients, admissions to general hospitals, and the out-door dispensary services, including the records of patients and special investigations into the incidence of diseases. He will also be in charge of the medical administration of the Blind Persons Act.

(IV.) A fourth Senior Assistant Medical Officer, who will act under the Deputy Medical Officer of Health for Education Health service and Maternity and Child Welfare, will undertake the executive supervision of the work of school medical inspection and treatment, including the visitation of school clinics and special institutions, and such other duties as may be allotted to him in connection with the Education Health service.

#### DIVISIONAL, &C., MEDICAL OFFICERS.

The existing arrangement whereby Divisional Medical Officers were reduced from five to four will remain, but increased responsibilities

will be thrown upon these officers in connection with general sickness. The position of Senior Child Welfare Medical Officer will also remain.

\* \* \* \* \*

The re-organisation of staff proposed is based on stratification of the functions of the Department along four main branches of work, and has regard to the relative magnitude, scope and efficient conduct of each, and to the main purpose to be served of working as much as possible along preventive lines, as laid down in the various circulars of the Department of Health. Apart from the transferred services as such, new duties will be entailed under the scheme for the institutional treatment of general sickness, while certain improvements in the administration of the existing Public Health services have been held over pending the re-organisation required by the Local Government Act. While the scheme of re-organisation now proposed entails certain new appointments, and an increase in expenditure, it will lead to ultimate economies when the former and added services are administered as a comprehensive whole, particularly in the more efficient use of clinics and institutions.

#### SUMMARY.

The Local Government Act involves the transfer to the Health Committee of three general hospitals and two convalescent homes, with 2,315 beds and a staff of 920 persons; three mental hospitals, with 2,984 beds and a staff of 806 persons; three institutions for mental defectives, with 563 beds and a staff of 127 persons, as well as about 100 medical and other staff associated with the Education Health service, in all 5,862 beds and approximately 2,000 staff.

The Committee have also a share (one half, equal to 133 beds) in Kirklands Asylum, at present administered by a Joint Committee, and will have an interest in the hospital section of the Southern General Hospital (approximately 600 beds).

It is proposed that the Health Department should be divided into four main branches, each administered, under the Principal Medical Officer of Health, by a Deputy Medical Officer, viz.:—A branch for each of (1) General Public Health administration; (2) Education Health and Maternity and Child Welfare services; (3) Mental services; and (4) General Hospital and Out-door Medical services.

The appointment of four Senior Assistant Medical Officers is also recommended—two to assist in the administration of the general Public Health services, one with the Education Health service, and one with the general hospitals and out-door medical services.

Of the four appointments as Deputy Medical Officers, only one is entirely new, namely, that for Mental services. Of the four appointments as Senior Assistant Medical Officers recommended, only one at present exists, that in connection with the Education Health services. The two appointments in connection with the general Public Health services and a third in connection with the general

hospitals and out-door medical services are new. The two Public Health appointments have been recognised as necessary for some time, but have been delayed pending re-organisation of the whole services in consequence of the Local Government Act.

The attached charts show the proposed organisation of the Department in schematic form. It will be understood that the duties are approximate and not exhaustive, and that the various functions dovetail into one another in a way which does not lend itself to representation on a chart.

A. S. M. MACGREGOR,

*Medical Officer of Health.*

25th March, 1930.

[NOTE.—Stewart Hall Home was subsequently placed under the administration of the Public Assistance Committee, and the Corporation also agreed that Caldwell House and Lennox Castle should also be administered by that Committee, the former with a view to developing it as a children's home, and the latter, until it is completed and handed over to the Health Committee, the medical administration resting with the Health Committee.]

# STATEMENT SHOWING NUMBERS AND CLASSIFICATION OF STAFFS OF TRANSFERRED INSTITUTIONS.

	Medical (Whole time.)		Medical (Part time.)		Nursing.		Domestic.		Clerical and other administrative staff.		All others.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Poor Law Hospitals.</i>														
Stobhill	16	2	18	10*	1	11	12	259	271	...	219	219	11	7
Western District	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eastern District	2	1	3	1	...	1	43	44	...	29	29	3	3	6
Dunculutha	3	...	3	3†	...	3	5	61	66	...	30	30	5§	4
Stewart Hall	...	...	...	...	...	...	...	3	3	...	4	4	...	...
Total	21	3	24	14	1	15	18	368	386	...	282	282	19	14
<i>Mental Hospitals.</i>														
Gartloch	4	...	4	...	...	...	57	100	157	...	33	33	8	3
Woodilee	5	...	5	...	...	...	73	135	208	...	47	47	8§	3
Stoneyetts and Blinkbonny	3†	...	3	...	...	...	28	11	39	...	9	9	4	1
Lennox Castle	...	1	1	...	...	...	...	16	16	...	8	8	...	1
Caldwell	4	...	4	...	...	...	61	70	131	...	20	20	5	2
Hawkhead	...	...	...	...	...	...	...	6	6	...	5	5	...	1
Total	16	1	17	...	...	...	219	338	557	...	122	122	25	11
Grand total	37	4	41	14	1	15	237	706	943	...	404	404	44	25

\* Includes one who also does Eastern District Hospital; one who also does Eastern District Hospital and Western District Hospital; and one who does all Institutions (only shown against Stobhill).

† Includes two who also do Eastern District Hospital; and one also who does out-door work (only shown against Eastern District Hospital).

‡ Medical Superintendent's duties also take in Lennox Castle and Blinkbonny (only shown against Stoneyetts).

§ Includes one part-time.

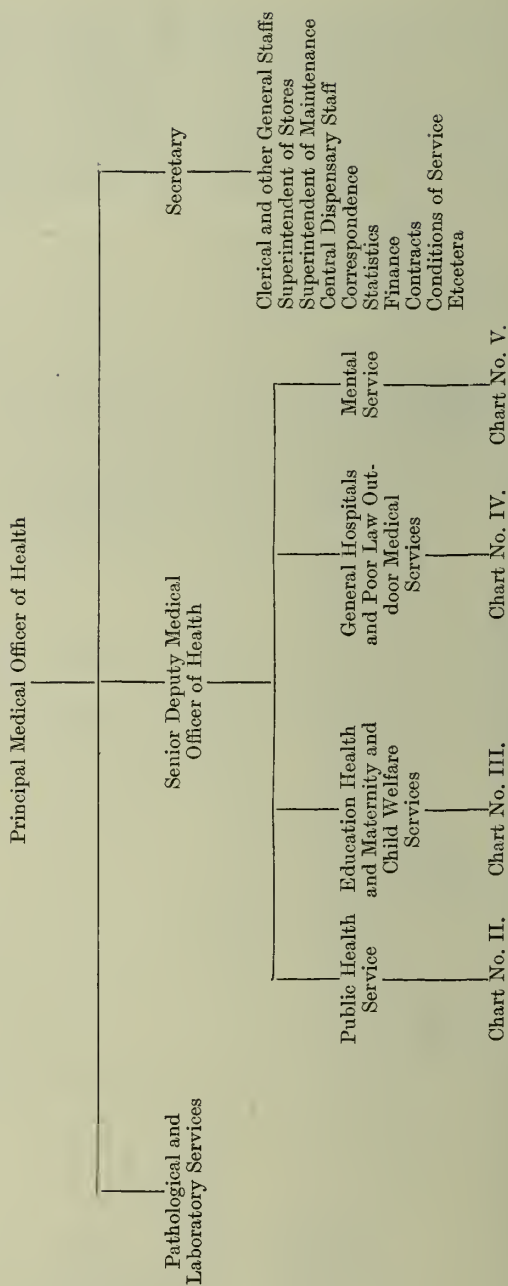
|| Includes Dentist who also does Lennox Castle (only shown against Stoneyetts).

Grand total ... 37 4 41 14 1 15 237 706 943 ... 404 404 44 25 69 356 25 381 688 1,165 1,853



# CHART No. I.

## SCHEME OF RE-ORGANISATION OF PUBLIC HEALTH DEPARTMENT.



## Senior Deputy Medical Officer of Health

Senior Assistant Medical Officer	Port Local Authority	Food and Milk Inspection	Housing	Air Purification	Senior Assistant Medical Officer
	Port Boarding Medical Officer	Senior Food Inspector - 1		Senior Smoke Inspector - 1	
Infectious Diseases Hospitals		Assistant Food Inspectors - 9		Assistant Smoke Inspectors - 5	Tuberculosis
	Sen. Port Insp. 1				Sanatoria
Belvidere - 666	Assist. Insps. 8				Beds
Ruchill - 814	Rat Catchers & Scarchers - 4				Robroyston - 588
Knightswood - 258					Bellefield - 108
Shieldhall - 120					Mearnskirik - 489
					Baird Street - 24
					1,209
					Voluntary Hospital Clinics (5)

Reception Houses (2)  
(Staff, 31)

Disinfecting Stations (2)

Superintendent - 1  
Staff - 37

38  
Disinfectors (9)

Special Investigations

Clinics (5)

## Public Health Divisions

Infectious and General Diseases  
General Sanitation  
Slum Clearance and Rehousing  
Investigations *re* Maternal Deaths

	Central	Northern	Eastern	South-Eastern	South-Western
Divisional Medical Officers -	1	1	1	1	1
Clinical Medical Officers -	1	1	1	1	1
Divisional Sanitary Inspectors -	1	1	1	1	1
Assistant Sanitary Inspectors, &c.	23	20	22	17	17
Nurses and Female Inspectors -	5	11	9	5	6
	31	34	34	25	25

# CHART No. III.

## EDUCATION HEALTH AND MATERNITY AND CHILD WELFARE SERVICES

Deputy Medical Officer of Health

Senior Assistant  
Medical Officer

Medical Inspection and  
Treatment of School Children

Assistant Medical Officers - 12  
Dentists - - - 6  
Nurses - - - 73

Part-time Specialist Officers - 10

91

101

No. of Inspections at Schools and Clinics (1928-29) - 124,318  
Attendances for Treatment (1928-29) - 413,606  
Special Visits by Nursing Staff (1928-29) - 14,059

Senior Maternity and Child Welfare  
Medical Officer

Child Welfare Medical Officers 9  
Nurses - 38  
Day Nurseries (6)  
Country Homes (4)  
Special Services  
Supervision of Midwives  
(275 on Roll)  
Supervision of Maternity Homes  
(47 on Register)  
Domestic Helps, &c.

Child Welfare Centres (14)

Year 1929  
No. of Sessions - 3,503  
Attendances - 158,489  
Home Visits - 75,892

CHART No. IV.

## GENERAL HOSPITALS AND POOR LAW OUTDOOR MEDICAL SERVICES

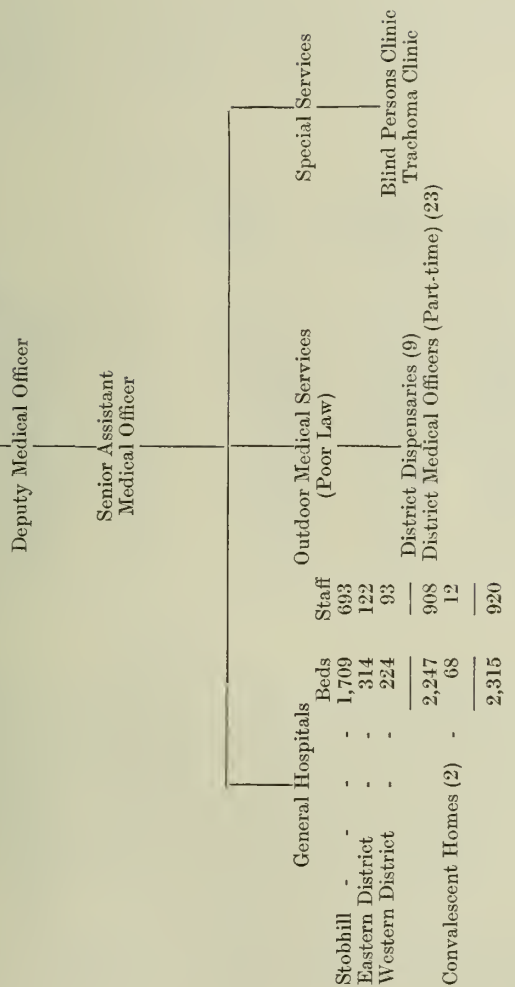


CHART No. V.

## MENTAL SERVICE

Deputy Medical Officer

## Special Services

## Mental Defective Institutions

## Mental Hospitals

	Beds	Staff	Beds	Staff	
Gartloch -	826	205	Stoneyctis -	345	75
Woodilee -	1,285	340	Lennox Castle -	113	35
Hawkhead -	873	201	Caldwell House -	105	17
	<u>2,984</u>	<u>806</u>		<u>563</u>	<u>127</u>

Observation Wards in  
General Hospitals  
Psychological Clinic



## SECTION II.

## VITAL STATISTICS.

The vital statistics are given in detail in respect of municipal wards, causes, sex, age, &c., in the appendix tables on pages 321 to 355, but a summary is here introduced of the principal numbers and rates for convenient comparison with those of the preceding years, based on the adjusted estimates of the population in view of the census figures for 1931 now available.

## SUMMARY.

	1928.	1929.	1930.
Population, ... ..	1,089,595	1,089,202	1,088,810
Acreage, ... ..	29,511	29,511	29,511
Persons per acre, ... ..	37	37	37
Number of Inhabited Houses,	251,307	254,594	259,401
Deaths—Number registered, ...	16,727	18,897	16,604
„ After correction for Transfers,	15,701	17,760	15,455
Births—Number registered, ...	24,187	23,301	23,888
„ After correction, ... ..	23,649	22,799	23,322
Death-rate per 1,000 living—			
All causes, ... ..	14.41	16.31	14.19
Birth-rate per 1,000 living, ...	21.70	20.93	21.42
Deaths under One Year—After			
correction, ... ..	2,525	2,438	2,355
Deaths under One Year—Per			
1,000 births, ... ..	107	107	101

## BIRTHS.

The number of births registered, corrected, for outward transfers, and including those transferred inward, was 23,322 in 1930, compared with 22,799 and 23,649 respectively for 1929 and 1928. There has thus been an increase of 523 births on the number for the previous year. This increase is small on a population of over one million, and would appear to indicate that the number of births has become stabilised at around 23,000, which is equivalent to a birth-rate of around 21 per thousand of the population.

The number of people who migrated from Scotland during the past ten years would appear to be 392,329 (1931 census figures), or an annual loss of approximately 40,000. On the basis of population the proportion effeiring to Glasgow would be in the region of ten thousand. The excess of births over deaths during 1930 was 7,967 and in 1929 only 5,039, so that, allowing for loss by migration, there would seem to be a retrograde movement in the population of from 2,000 to 5,000 persons per annum, according to whether the death-

rate was high or low. The adverse balance of deaths over births has been taking place during recent years, in several of the old residential wards of the City, as was pointed out in the report for 1929. The following are some more examples —

WARD.				Death Rate per Million.	Birth Rate per million.	Excess of Death-Rate over Birth-Rate.
Park, ...	...	...	...	14,825	9,458	4,367
Kelvinside, ...	...	...	...	12,206	8,167	4,039
Pollokshaws, ...	...	...	...	12,259	10,451	1,808
Camphill ...	...	...	...	13,698	10,210	3,488
Langside, ...	...	...	...	11,296	9,394	1,902

The birth-rate for the City was 21·4 per thousand of the population. The highest rates were 28·6 in Calton, 28·2 in Dalmarnock, and 27·9 in both Cowcaddens and Govan. The lowest rate was 8·2 in Kelvinside, followed by 9·4 in Langside, and 9·5 in Park Ward. These and other municipal ward rates are given in Appendix Table V, which contains also the rates for the preceding year.

The following information from the Registrar-General's returns shows the birth-rates for Glasgow and Scotland since 1871 :—

Glasgow. Scotland.			Glasgow. Scotland.		
1871-1880, ...	36·6	34·9	1924, ...	24·1	21·9
1881-1890, ...	36·5	32·4	1925, ...	24·6	21·3
1891-1900, ...	33·7	30·3	1926, ...	23·5	20·9
1901-1910, ...	31·2	28·4	1927, ...	22·4	19·8
1911-1920, ...	25·7	24·2	1928, ...	22·3	19·8
1921, ...	28·7	25·2	1929, ...	21·2	19·0
1922, ...	27·3	23·5	1930, ...	21·6	19·3
1923, ...	25·6	22·8			

On the basis of local returns, the following comparison is made of the rates for several years in Glasgow and other towns :—

				1928.	1929.	1930.
Glasgow, ...	...	...	...	20·6	19·6	21·4
Edinburgh, ...	...	...	...	17·3	17·1	17·2
Dundee, ...	...	...	...	20·3	20·9	21·0
Aberdeen, ...	...	...	...	20·7	19·6	20·8
London, ...	...	...	...	16·2	15·8	15·7
Liverpool, ...	...	...	...	22·1	21·6	21·5
Manchester, ...	...	...	...	16·8	16·9	16·6
Birmingham, ...	...	...	...	17·6	17·1	17·7

### ILLEGITIMATE BIRTHS.

During the year there were 1,523 births registered as illegitimate, which is equal to 6·5 per cent. of the total births, as compared with 6·8 per cent. in 1929. Most of the wards are around the average for the City, as is shown in Appendix Table V.

A more accurate comparison of the legitimate and illegitimate birth-rates is obtained when the calculation is based on the number

of females of child-bearing ages; the former on married women of 15 to 44 years of age, and the latter on the unmarried women and widows of the same ages. This is given in the following table:—

GLASGOW.—BIRTH-RATES, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE IN CERTAIN YEARS FROM 1871.

(Based on figures of Registrar-General).

Year.	Number of Legitimate Births.	Rate per 1,000 Married Women 15-44 years.	Number of Illegitimate Births.	Rate per 1,000 Unmarried Women and Widows 15-44 years.
1871	17,118	298	1,749	27
1881	17,605	293	1,501	22
1891	18,304	283	1,553	21
1901	22,676	260	1,530	14
1911	19,966	229	1,603	14
1921	27,790	238	1,922	13
1922	26,565	227	1,733	12
1923	25,209	216	1,493	10
1924	23,844	204	1,486	10
1925	23,931	205	1,491	10
1926 (Old City)	22,895	196	1,450	10
1927	22,128	186	1,453	10
1928	22,075	186	1,575	11
1929	21,254	179	1,552	11
1930	21,801	177	1,526	10

It is interesting to note that comparing the rates of 1930 with those of the pre-war year, 1911, both the legitimate and illegitimate birth-rates have fallen in exactly the same ratio, namely, 77 per cent.

MARRIAGES.

In contrast with the considerable reduction in the birth-rate since the beginning of the present century—fully 30 per cent.—the marriage rate remains practically constant. This consonance with the decreasing birth-rate and the smaller size of families, has resulted in the lowering of the average number of persons per house, to which reference has already been made at the beginning of Section I of the present report.

The rate, 8·7 per thousand persons for 1930, is higher than that for the preceding year, despite the fact that trade depression has been increasing. It may be that this increase is due to the easing of the housing position, which has been more definite during 1930 than has been the case since building operations ceased in 1916.

— GLASGOW.—MARRIAGES PER 1,000 PERSONS LIVING.

1871-1880,	...	9·1	1924,	...	...	8·4
1881-1890,	...	9·3	1925,	...	...	8·5
1891-1900,	...	9·4	1926,	...	...	8·3
1901-1910,	...	8·8	1927,	...	...	8·5
1911-1920,	...	9·7	1928,	...	...	8·7
1921,	...	10·7	1929,	...	...	8·5
1922,	...	9·1	1930,	...	...	8·7
1923,	...	9·6				

## DEATHS.

The total number of deaths registered during the year was 16,604, which becomes 15,455 after adjustment for inward and outward transfers. The death-rate is thus 14·2 per thousand of the population, compared with 16·3 for the preceding year. Reference to Table XXIV. in the appendix shows that the mortality during the past ten years has remained very uniform at from 14 to 15 per thousand of the population, with the exception of certain years, such as 1922 (16·6) and 1929 (16·3), when influenza and influenzal pneumonia were prevalent.

*Quarterly Death-rates.*—As will be seen from the following table, the seasonal mortality varies considerably. In the three years shown the highest mortality which occurred in the first quarter of 1929 is 25·2, and the lowest in the third quarter of the same year, 10·4. In 1930 the first quarter had again the highest mortality, but on this occasion it was only 16·1, when measles was prevalent. During the fourth quarter, when scarlet fever and pneumonia were prevalent, the quarterly death-rate was 13·7.

	1928.	1929.	1930.
1st Quarter, 1928	17·1 { Measles, Whooping-cough, and Pneumonia prevalent.	25·2 { Pneumonia and Influenza prevalent.	16·1 { Measles prevalent.
2nd „ 1928	13·4	12·7	13·0
3rd „ 1928	11·1	10·4	10·5
4th „ 1928	13·1	12·9	13·7 { Scarlet Fever and Pneumonia prevalent— December Fogs

*Ward Death-rates.*—The death-rates in the various municipal wards have in recent years tended to become more uniform. There are no excessive rates; indeed, during 1930 there is no ward with a rate of 20 per thousand of the population. The nearest to that figure is 19·3 in Calton, which is almost 5 per thousand less than the rate obtaining in the same ward during the preceding year. The next highest rate was 18·9 in Exchange, followed by 17·5 in Blythswood and 17·3 in Gorbals. The lowest rate was 9·9 in Cathcart, followed by 10·0 in Whiteinch, while rates of under 12 were recorded in Langside, Kelvinside and Pollokshaws.

According to the Registrar-General's returns, the rates for Glasgow since 1881 have been as follows:—

## GLASGOW.—ALL CAUSES.—DEATH-RATE PER 1,000 LIVING.

1881-1890,	...	24·22	1924,	...	...	16·10
1891-1900,	...	21·53	1925,	...	...	14·83
1901-1910,	...	19·56	1926,	...	...	15·09
1911-1920,	...	16·36	1927,	...	...	14·63
1921,	...	15·10	1928,	...	...	14·80
1922,	...	17·20	1929,	...	...	16·53
1923,	...	14·28	1930,	...	...	14·31

The following is a comparison of death-rates based on local returns of several large towns in Scotland and England :—

GLASGOW AND SEVERAL TOWNS—DEATH-RATE PER 1,000 LIVING.

			1927	1928	1929	1930
<b>Glasgow,</b>	...	...	<b>13·7</b>	<b>14·4</b>	<b>16·3</b>	<b>14·2</b>
Edinburgh,	...	...	14·3	13·7	15·1	14·2
Dundee,	...	...	16·9	15·1	16·0	15·9
Aberdeen,	...	...	13·7	14·0	15·2	13·1
London,	...	...	12·1	12·1	14·2	11·5
Liverpool,	...	...	13·9	13·2	15·1	12·8
Manchester,	...	...	13·8	12·9	15·4	12·7
Birmingham,	...	...	11·6	10·9	13·5	10·8

*Transfer Deaths.*—The deaths on which the above rates for Glasgow are calculated include those of persons formerly resident in Glasgow, but dying in institutions or elsewhere outwith the City. On the other hand, those dying within, but with home addresses outside, are excluded. The “inward transfers” numbered 564 during 1930, compared with 575 and 565 for the two preceding years, while the “outward transfers” numbered 1,713, compared with 1,712 and 1,591. The causes of deaths in both these groups are given in Appendix Table No. VII.

### CAUSES OF DEATH.

The principal causes of death are summarised as follows :—

SUMMARY OF DEATH-RATES PER MILLION FROM PRINCIPAL CAUSES.

			1928.	1929.	1930.
General Diseases—					
(a) Infectious,...	...	...	1,265	901	1,009
(b) Tuberculous—					
(1) Phthisis,	...	...	876	941	805
(2) Others,	...	...	317	303	337
(c) Malignant (cancer, &c.),...			1,312	1,356	1,320
Diseases of the nervous system,			1,461	1,574	1,436
Diseases of the circulatory system,			2,265	2,631	2,405
Diseases of respiration, ...			2,399	3,360	2,411
Congenital defects and malformations (including premature birth), ...					
	...	...	801	770	739
Violence, ...	...	...	608	618	663
All other causes,	...	...	3,106	3,852	3,069
All causes, ...			14,410	16,306	14,194

The mortality from infectious diseases was heavier in 1930 because of the prevalence of measles in the early months of the year, when also respiratory complications were common. At that time of the year there is greatest pressure on hospital accommodation, and every endeavour is made year after year to accommodate as many as possible of the most serious illnesses. Whooping-cough, although less



fatal, was responsible for a rate of 207 per million of the population, which, with 244 for measles, accounts for almost half the total death-rate from all infectious diseases.

Scarlet fever mortality was only slightly higher, 38 compared with 36, despite the considerably increased prevalence of the disease, while the death-rate from diphtheria was 133 compared with 124 for the preceding year. The death-rate from influenza was only 147 per million of the population, compared with 806 in 1929, when there was a marked prevalence of the disease in the early months of the year.

The death-rate from pulmonary tuberculosis is again definitely lower at 805 per million of the population, compared with 941 in 1929, i.e., a reduction of 36 in the rate, following an almost similar reduction in 1929 on the preceding year. The death-rate is now only about one-fourth of the rates obtaining when the campaign was begun for the prevention of tuberculosis, particularly after the beginning of the present century. The death-rate from non-pulmonary tuberculosis, 337, compares with 303 for 1929.

Malignant diseases were responsible for a death-rate of 1,320, which is 32 per thousand less than in 1929. Cancer during the past few years has not shown the same tendency to increase which had been in evidence for a considerable period previously. Further reference is made below to the statistics. Diseases of the nervous system were less fatal; the death-rate from cerebral hæmorrhage being reduced from 988 to 917 during 1930. The meningitis rate was slightly higher. Mortality from diseases of the circulatory system, 2,405, was lower by 226 than the rate for 1929, but compares unfavourably with that of 1928. In this group heart disease is responsible for more than four-fifths of the total, the rate in 1930 being 1985. Arterio sclerosis mortality rate was 338, and other circulatory diseases 82.

The greatest reduction in any group of causes of death was shown by respiratory diseases. The mortality per million of the population was 2,411 against 3,360. Here pneumonia, in all its forms, formed approximately two-thirds of the total, the rates in 1930 being 1628, compared with 2,248 for the preceding year. Bronchitis is always adversely affected by epidemics of influenza, as was the case in 1929, when the mortality rate was 891; the rate coming down to 576 in 1930.

The death-rate from congenital causes, 739, when compared with 1928, which was not affected by the high respiratory mortality, is very favourable, especially when it is remembered that the birth-rate has remained practically uniform at around 21 during the past four years.

There were 722 deaths from violence, &c., representing a rate of 663. This is a very considerable increase on the rates for preceding years, and is no less than 45 above the mortality rate for 1929. The increasing motor traffic is no doubt the cause of most of this increase.

Particulars of the other causes of death will be found in Appendix Table VIII.

#### AGE AND SEX DISTRIBUTION OF DEATHS.

The age and sex distribution for each cause is given in Appendix Table IX. As the variations remained mostly uniform in character and have been described in previous reports, detailed reference need

not again be made here. The uniformity of the sex comparison of the total deaths is indicated by the following statement of the proportion of males and females in every thousand deaths during the past three years :—

				Males.	Females.
1928,	...	...	...	523	477
1929,	...	...	...	516	484
1930,	...	...	...	522	478

Among the infectious diseases there is usually a tendency to higher mortality in the females. An instance of this in 1930 is whooping-cough, where there were 126 female and 99 male deaths. Infectious diseases of the central nervous system, however, are generally more fatal to males, and in 1930 there were 55 males compared with 38 females for meningococcal meningitis: 26 of the males died in the first year of life, compared with 10 females.

With regard to cancer, the continuous increase which has been noted from year to year has become less marked, indeed there is quite a definite tendency for death-rates to remain uniform, despite the fact that the population is gradually ageing. In the annual report for 1923 attention was drawn to this factor, but as the disease attacks so many organs and tissues of the body, it is necessary to make more definite comparison of the site of attack, and this is given in the following table, showing sex and age distribution of deaths for 1930.

#### DEATHS FROM CANCER.

Site of Lesion.	Males.													Total	Year 1929
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+		
Buccal Cavity, ...	—	—	—	—	—	—	—	—	2	6	24	24	5	61	57
Pharynx, Esophagus, Stomach, Liver, and Adnexa, ...	—	—	—	—	—	1	—	1	21	44	93	86	16	262	283
Peritoneum, Intestines, and Rectum, ...	—	—	1	—	—	—	—	1	12	24	48	55	23	164	189
Genital Organs, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Breast, ...	—	—	—	—	—	—	—	1	—	—	—	—	1	2	—
Skin, ...	—	—	—	—	—	—	—	—	—	—	6	4	5	15	11
Other or Unspecified Organs, ...	—	—	2	—	—	1	1	1	10	37	53	48	14	167	169
Totals, ...	—	—	3	—	—	2	1	4	45	111	224	217	64	671	709

Site of Lesion.	Females.													Total	Year 1929
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+		
Buccal Cavity, ...	—	—	—	—	—	—	—	—	1	2	1	2	1	7	6
Pharynx, Esophagus, Stomach, Liver, and Adnexa, ...	1	—	—	1	—	1	—	3	10	31	77	77	42	243	205
Peritoneum, Intestines, and Rectum, ...	—	—	—	—	—	—	—	2	11	23	37	58	33	164	151
Female Genital Organs, ...	—	—	—	—	—	—	—	9	17	42	38	20	6	132	168
Breast, ...	—	—	—	—	—	—	—	6	11	36	39	21	10	123	121
Skin, ...	—	—	—	—	—	—	—	—	2	1	1	1	4	9	11
Other or Unspecified Organs, ...	—	—	1	—	1	—	—	2	9	17	23	24	11	88	106
Totals, ...	1	—	1	1	1	1	—	22	61	152	216	203	107	766	768

The reduction in the number of cancer deaths in 1930 occurred mainly among the males, there being only 671 deaths, compared with 709 during the preceding year, while the female deaths are only less by two. Cancer of the buccal cavity still shows the same disparity in its prevalence, occurring mostly among males, to which special reference was made last year, and while there was a reduction in the number of those dying with disease of the stomach, &c., among the males, there was an increase among the females from 205 in 1929 to 243 in 1930. The same number of deaths from cancer of the peritoneum, intestines and rectum was recorded for both sexes, but cancer of the female genital organs and breast accounted altogether for 255 female deaths.

The average death-rate from cancer in the City was 1,320 per million of the population, compared with 1,356 in 1929. The highest ward rate was 2,659 in Park Ward, probably because of the fact that the cancer hospital is situated in that division. The next highest rate was 2,274 in Camphill, followed by 1,776 in Kelvinside, two of the good residential wards in the City.

Among nervous diseases, cerebral hæmorrhage is a prominent cause, and affects mostly the old ages of both sexes. Heart disease forms more than 80 per cent. of the circulatory group of diseases. As respiratory diseases are dealt with in Section V. mention need only be made here to the fact that all forms of pneumonia make up more than two-thirds of the total deaths, and nearly one-third of these occurred in the first year of life. Diarrhœa, under one year of age, was the cause of 291 deaths, compared with 283 in 1929, the mortality being heavier among males, with 164 deaths to 127 females. Deaths from appendicitis were more by three at 107.

Cirrhosis of the liver was the cause of 36 deaths in 1930, compared with 44 in the preceding year, male deaths numbering 23, against 35. This is interesting in view of the recent considerable reduction which has taken place in the consumption of whisky, as indicated by the excise reports. Puerperal fever deaths and deaths from congenital causes will be dealt with in the next section of this report.

Reference has been made in recent years to the increasing number of deaths from violence, due mainly to motor transport. The following comparison of deaths from violence at various ages shows also the excess of boys of school ages compared with females.

#### GLASGOW—DEATHS FROM "SUICIDE AND OTHER VIOLENCE."

Year.	MALES.					FEMALES.					Both Sexes.
	- 5 years.	- 15 years.	- 45 years.	+ 45 years.	Total.	- 5 years.	- 15 years.	- 45 years.	+ 45 years.	Total.	
1925, ...	64	44	94	160	362	53	15	26	95	189	551
1926, ...	66	42	128	150	386	52	20	41	82	195	581
1927, ...	62	52	155	225	494	42	23	44	108	217	711
1928, ...	52	44	126	204	426	44	26	62	105	237	663
1929, ...	48	55	153	210	466	38	22	38	109	207	673
1930, ...	45	66	165	237	513	33	22	49	105	209	722

Classification altered, in 1927, to "Suicide and other Deaths from Violence."

*Deaths in Hospitals, Nursing Homes, and other Institutions.*—Details of the deaths in Glasgow institutions are given in Appendix Table X., which shows that almost half (45 per cent.) of the total deaths registered occurred in such institutions. This high proportion is an indication of the need for institutional accommodation required for the sick. Of the total 7,203 deaths, 2,837 occurred in Poor Law institutions and 2,315 in general hospitals and infirmaries. In Local Authority hospitals there were 1,733 deaths and in nursing homes, asylums, &c., 318. Deaths from pneumonia numbered 1,042 and were more numerous than those from any other cause. Heart disease 823, all forms of tuberculosis 719, and cancer 557, were the next highest specified causes of death.

*Uncertified Deaths.*—Uncertified deaths during 1930 numbered 10, compared with 18 during 1929. Two of these were infants under one year of age. In addition, there were eight inward transferred deaths noted as uncertified.

## SECTION III.

### MATERNITY AND CHILD WELFARE.

#### INFANT MORTALITY.

Reference was made a year ago to the disappointing infant mortality rate, which remained at the comparatively high level of 107 per thousand births during three years, 1927-29. The year 1929, however, was unfavourable to life in general, as mortality, especially among the young, and at the older ages, was considerably increased by the prevalence of respiratory diseases. Variations in the annual infant mortality rates are usually caused by the alternate or coincident epidemics of measles and whooping-cough, or the recurring prevalences of pneumonia, but when the latter is of influenzal type, and occurs coincidentally with measles or whooping-cough infant life is apt to suffer.

In 1930 the infant mortality rate was adversely affected in the early months of the year by an epidemic of measles, but the more favourable conditions in the latter half of the year has reduced the annual rate to 101, which, though still above the hundred level, is the second lowest on record in Glasgow. The lowest rate was 89 in 1923. A comparison of the rates since 1860 is contained in the last column of Table XXIV. in the Appendix.

The number of deaths of infants under one year during 1930 was 2,355, compared with 2,438 during the preceding year. The deaths under one year in each Municipal Ward of the City during 1930, with the relative rates per 1,000 births, are contained in Appendix Table XII., with a comparison of the rates during the two preceding years.

The following tables show (1) the infant death-rates in Glasgow since 1891; (2) the rates in other large towns; and (3) the death-rates among legitimate and illegitimate children per 1,000 births in each group.

#### GLASGOW—INFANT DEATH-RATE DURING SEVERAL PERIODS.

				Per 1,000.		Per 1,000.	
Average of 10 years,	1891-1900,	149	1926, ...	...	104		
„	10 „	1901-1910,	135	1927, ...	...	107	
„	5 „	1911-1915,	134	1928, ...	...	107	
„	5 „	1916-1920,	115	1929, ...	...	107	
„	5 „	1921-1925,	107	1930, ...	...	101	



## COMPARISON WITH SEVERAL LARGE TOWNS.

			1928.	1929.	1930.
<b>GLASGOW,</b>	...	...	<b>107</b>	<b>107</b>	<b>101</b>
Edinburgh,	...	...	75	80	82
Dundee,	...	...	102	102	114
Aberdeen,	...	...	94	95	80
London,	...	...	67	71	59
Liverpool,	...	...	94	96	82
Manchester,	...	...	91	97	79
Birmingham,	...	...	65	79	60

*Illegitimate Mortality.*—The mortality among illegitimate infants at the beginning of the present century was double that among legitimate infants ; it is now only little more than 50 per cent. in excess. The illegitimate death-rate, 146, is the lowest recorded, while the rate, 91, among the legitimate births is six in excess of the record which occurred in 1923.

## GLASGOW.—DEATH-RATE PER 1,000 LEGITIMATE AND ILLEGITIMATE BIRTHS.

	Legitimate.	Illegitimate.		Legitimate.	Illegitimate.
1899-1900,	... 144	286	1926,	... 101	157
1901-1910,	... 126	257	1927,	... 105	147
1911-1915,	... 127	217	1928,	... 102	176
1916-1920,	... 110	175	1929,	... 103	165
1921-1925,	... 103	169	1930,	... 91	146

There were 1,337 deaths of male infants and 1,018 deaths of female children during the year, compared with 1,387 and 1,051 respectively for the previous year. The infant mortality rate for males was 112 and for females 89, while the ratio of male deaths to 100 female deaths was 131, compared with 122 for 1929.

*Causes of Infant Mortality.*—The causes of infant deaths according to sexes and for each month during the first year of life are given in Appendix Tables XIII. and XIV. About 33 per cent. of the male deaths and 35 per cent. of the female deaths occurred in the first month of life. Nearly half of these early deaths are due to premature births.

As is shown in the summary of the totals of the principal groups of causes of infant death in Tables XIII. and XIV., which is given below, with a comparison for previous years since 1916, the death-rate from causes in the immaturity group has shown little reduction, the rate varying in the case of males from 36 to 46 and of females from 27 to 37.

		Rate per 1,000 Births.												
CAUSES OF DEATH.		1916-20	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930		
MALES—														
I.	Immaturity, ... ..	46	41	40	36	42	41	44	39	45	45	40		
II.	Diseases of Respiratory System, ...	27	22	43	20	39	30	29	36	28	35	33		
III.	Diseases of Digestive System, ...	18	21	12	12	14	15	15	17	17	14	14		
IV.	Diseases of Nervous System, ...	8	7	7	7	6	8	8	6	7	6	5		
V.	Tuberculous Diseases, ... ..	3	3	2	3	3	2	2	1	2	1	2		
VI.	Infectious Diseases, ... ..	11	14	17	13	17	13	11	14	15	9	12		
VII.	Suffocation, ... ..	—	—	1	—	—	—	—	1	—	—	—		
VIII.	All other causes, ... ..	10	9	12	8	9	9	9	5	7	8	6		
All causes, ...		123	117	134	99	130	118	118	119	120	118	112		
FEMALES—														
I.	Immaturity, ... ..	36	36	34	31	31	27	29	37	33	34	33		
II.	Diseases of Respiratory System, ...	21	16	29	16	29	20	23	24	23	27	25		
III.	Diseases of Digestive System, ...	14	15	9	8	11	10	13	10	11	10	10		
IV.	Diseases of Nervous System, ...	6	5	5	4	5	4	4	4	4	5	3		
V.	Tuberculous Diseases, ... ..	3	2	2	2	1	1	1	1	2	2	2		
VI.	Infectious Diseases, ... ..	11	12	16	12	17	14	10	14	14	10	11		
VII.	Suffocation, ... ..	—	—	1	—	1	1	1	—	1	—	—		
VIII.	All other causes, ... ..	9	6	9	6	9	6	7	5	5	7	5		
All causes, ...		100	92	105	79	104	83	88	95	93	95	89		
Ratio—Males to 100 Females, ...		123	127	127	125	125	142	134	125	129	122	131		

The reduction in the infant mortality during 1930 has been partly due to a lower mortality from disease of the respiratory system, as shown in the preceding table. Deaths due to immaturity occur almost wholly in the first month of life. These, along with respiratory diseases and digestive diseases, both largely depending on the climatic conditions, are the main causes, apart from the infectious diseases which predominate during the later months of the first year of life. The death-rate from diseases of the digestive system in 1930 remained the same as in the previous year, the rates being 14 and 10 respectively for males and females. Deaths in this group are due to diarrhoea and enteritis, which now retain a fairly uniform level, whereas in the early years of the present century there was considerable variation, depending on the occurrence of periods of high temperature during the third quarter of the year. Deaths from enteritis are now mostly of the type associated with pneumonia and other respiratory affections.

Deaths from diseases of the nervous system, although forming a comparatively small proportion of the total, were fewer than in any previous year, the mortality rates for males and females being five and three respectively, against six and five in 1929. The death-rate from tubercular diseases also forms a comparatively small proportion of the total, the rate for both sexes being two per thousand births. These rates however, represent 24 deaths among males and 19 among females, most of which were certified as due to tubercular meningitis, a form of the disease usually associated with pulmonary disease in the parents. Only one male and one female death was registered as due to abdominal tuberculosis. The mortality from infectious disease varies with their prevalence, especially measles and whooping-cough, both of which contributed the higher rates of 12 and 11 for males and females respectively, compared with 9 and 10 in 1929. The next important cause

in this group is meningococcal meningitis, which was the cause of 26 male deaths and 10 female deaths. Among the remaining causes of death, five male and three female deaths were definitely ascribed to syphilis.

*Infant Mortality in Wards.*—The highest ward mortality was 153 in Exchange, in the centre of the city, where most of the dwelling-houses are of the old tenement type occupied by the poorer classes. These high rates probably occur because measles or whooping-cough reaches epidemic form in that district at a time of the year when respiratory complications prove most fatal. The next highest rate is 131 in Calton, a considerable part of which is in the same category. This rate for Calton, however, is a decided improvement on those of previous years, namely 150 in 1929 and 161 in 1928. Other high rates were 128 in both Mile-End and Gorbals, 126 in Whitevale, and 124 in Hutchesontown, all wards with large child populations. Among the low rates, that of Kelvinside is outstanding at 11, and although this was formerly a large residential ward, it now contains a combined housing scheme of Corporation and private enterprise houses. There were 184 births in the ward and only two deaths. The next lowest rate was 49, which obtained in Pollokshaws and Langside, followed by 50 in Cathcart and 65 and 66 in Park and Pollokshields respectively.

#### CHILD WELFARE SCHEME.

The erection of the Child Welfare Centre in the Anderston district was begun during the year, and the buildings will be ready for occupancy during 1931. This new centre was described in the Annual Report for 1928, and a plan published illustrating the accommodation provided.

The provision of additional Maternity Hospital accommodation, referred to in a special memorandum included in the report for 1929, has been under continuous consideration since then. Additional beds will be made available in Stobhill Hospital next year, and the reconstruction and additions to the maternity block there, begun by the Parish Council, are now proceeding. This extension will bring the maternity accommodation there up to about 80 beds in all. Under the agreement entered into with the Royal Maternity Hospital and the Parish Council whereby patients unable to be admitted to the former were sent on to the latter, it was found that expansion was necessary in view of the pressure on the Maternity Hospital for abnormal cases. The agreement is in course of being reviewed in consequence of the passing of the Local Government Act.

The transfer of the Education Medical Service to the Health Department has enabled a degree of co-ordination with the Child Welfare Service to take place. Certain Child Welfare Clinics have been made available as clinics for school children, either temporarily or permanently. A review has been made of the orthopaedic requirements of both services, and a report drawn up showing how these can be effectively and economically administered in one consultation, supervision, and "clearing-house" centre. These matters will be more fully dealt with in next year's report.

Plans are in course of preparation for a joint school and Child Welfare Centre at Rhymer Street, in the Garngad area, and a similar one in respect of Orr Street, Bridgeton. The situation as regards the south-eastern area has been reviewed, and is under consideration. Here also the suggestion is that a similar joint clinic, on vacant ground at Rose Street, should be provided.

### NOTIFICATION OF BIRTHS.

The number of notifications of births received during 1930 is shown in Appendix Table XV., compared with the corresponding figures for the two preceding years. As notifications include still births, the notifications are always in excess of the number of births registered. Omissions to notify births in terms of the Act average around  $2\frac{1}{2}$  per cent., but most of these are formally intimated after attention has been directed to the omission.

*Nature of Attendance at Births.*—The proportion of births medically attended fell from 48·6 per cent. in 1914 to 40·1 in 1925. In 1930 the proportion was 44·0.

*Still-Births.*—The number of still-births known to occur in Glasgow usually averages about 4 per cent. of the total births. During 1930 there were 1,031 still-births, equal to a rate of 4·2. Of the medically attended births there were 250 still-births among home cases, representing a rate of 3·9, and 380 in institutions, equal to a rate of 8·7. Together the rate indicated is 5·9. Among non-medically attended births there were 401, which is equivalent to a rate of 2·9.

### WORK AT THE MATERNITY AND CHILD WELFARE CENTRES.

During last year a number of alterations were made in the weekly time-table of Child Welfare sessions. A weekly ante-natal clinic on Monday afternoon was begun at Shettleston, and another infant consultation has been arranged at the same centre on Wednesday afternoons. Owing to the increasing numbers attending at Shettleston it also became necessary to arrange another consultation at that centre.

The following is the revised list of clinics :—

#### LIST OF MATERNITY AND CHILD WELFARE CLINICS.

	9 a.m.	1.30 p.m.
Monday,	1 Maxwell St., Partick (Ante-natal). Church Hall, Garngad Hill. 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. 2 Summertown Road, Govan (Ante-natal). Elder Park (Ante-natal).	20 Cochrane St. (Ultra-Violet Ray). 1 Maxwell Street, Partick. 60 Avenuepark Street. 106 Orr Street. 130 Adelphi Street, S. 132 Weir Street. 2 Summertown Road, Govan (Ultra-Violet Ray). Shettleston (Ante-natal). Elder Park Centre.



<b>Tuesday,</b>	77 Port Street (1-5 years). Church Hall, Garngad Hill. 194 Campbell St., Springburn. 60 Avenuepark Street. Wellshot Road, Shettleston. Pollokshaws. 2 Summerton Road, Govan.	77 Port Street. 614 Dobbie's Loan (Ante-natal). 106 Orr Street. Wellshot Road, Shettleston. Adelphi Street, (Ante-natal). Elder Park Centre (Ante-natal).
<b>Wednesday,</b>	20 Cochrane St. (Ultra-Violet Ray). 77 Port Street. 60 Avenuepark Street. 106 Orr Street (1-5 years). 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Road, Govan (Ultra-Violet Ray).	20 Cochrane Street. 1 Maxwell Street, Partick (1-5 years). 194 Campbell St., Springburn (Ante-natal). 614 Dobbie's Loan. 106 Orr Street. 130 Adelphi Street, S. (Ante-natal). 132 Weir Street. 2 Summerton Road, Govan. Elder Park Centre.
<b>Thursday,</b>	20 Cochrane Street (1-5 years). 1 Maxwell Street, Partick. 614 Dobbie's Loan (1-5 years). 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 132 Weir Street.	1 Maxwell Street, Partick (1-5 years). 60 Avenuepark Street (Ante-natal). 614 Dobbie's Loan (-1 year). 106 Orr Street. Wellshot Road, Shettleston (Ante-natal). 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Road, Govan (Ante-natal)
<b>Friday,</b>	1 Maxwell St., Partick (Ante-natal) 194 Campbell Street, Springburn. 614 Dobbie's Loan (1-5 years). 106 Orr Street. Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 2 Summerton Road, Govan.	20 Cochrane St., (Ultra-Violet Ray). 1 Maxwell Street, Partick. 194 Campbell Street, Springburn. 614 Dobbie's Loan. 106 Orr Street (Ante-natal). 2 Summerton Road, Govan (Ultra-Violet Ray). Elder Park Centre. Shettleston.

Maternity Hospital Ante- and Post-natal Clinics—Daily, Monday to Friday, at 1.30 p.m.  
Vaccination is also done at 20 Cochrane Street on Tuesdays at 12.30 p.m.

The number of Centres is now 14, at which are held weekly 71 consultations, 13 of them being ante-natal clinics, 52 infant consultations, and 6 ultra-violet light treatment clinics. At the Centres infant consultations to the number of 2,787 were held in 1930 compared with 2,625 during the preceding year. In addition to these there were 583 ante-natal and 295 actinotherapy sessions.

The total number of attendances at the infant consultations during 1930 was 143,556, compared with 129,120 for the preceding year, an increase of 14,436, which is considerable, when it is remembered that the number of births in 1930 was only 523 more than in the previous year. Of the total attendances, 10,613 were in respect of new infants, while 132,943 subsequent attendances were recorded. As the consultations held during the year number 2,787, the average attendances at each was almost 52, while the ratio of subsequent attendances to primary attendances was 13 to 1. Primary attendances at all the centres were greater in number than a year ago, with the exception of that at Port Street, where there was a small reduction.



The following table gives the attendances at each Consultation Centre during the years 1929 and 1930 :—

### ATTENDANCES AT INFANT CONSULTATIONS, 1930.

	No. of Consultations held.	Children -1 Year. No. of Attendances.		Children +1 Year. No. of Attendances.		Total No. of Attendances		1929 Total No. of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Adelphi Street, ...	300	1,098	8,439	246	9,616	1,344	18,055	1,392	19,114
Cowcaddens, ...	253	810	5,615	282	7,600	1,092	13,215	959	12,604
Elderpark, ...	199	570	4,641	197	4,277	767	8,918	237	1,824
Garngad Hill, ...	100	410	2,652	117	3,473	527	6,125	427	5,434
Govan, ...	155	447	3,443	135	3,568	582	7,011	564	6,244
Orr Street, ...	403	1,393	11,826	258	9,131	1,651	20,957	1,474	21,100
Maryhill, ...	152	452	3,565	128	4,290	580	7,855	561	7,844
Partick, ...	250	602	4,424	205	5,348	807	9,772	710	8,894
Port Street, ...	155	390	3,093	130	2,473	520	5,566	531	5,874
Shettleston, ...	263	700	6,606	218	8,212	918	14,818	780	12,454
Weir Street, ...	251	494	3,868	144	5,315	638	9,183	591	8,944
Cochrane Street, ...	100	161	1,125	69	1,296	230	2,421	224	2,964
Springburn, ...	154	592	3,577	192	3,838	784	7,415	612	6,194
Pollokshaws,* ...	52	117	848	56	784	173	1,632	107	454
2,787		8,236	63,722	2,377	69,221	10,613	132,943	9,169	119,954
		71,958		71,598		143,556		129,120	

\* Opened, 3rd Sept., 1929.

The illness, &c., recorded on first attendance at the consultations are here summarised :—

### INFANT CONSULTATIONS.—ILLNESSES, &C., RECORDED.

	1929.		1930.	
	-1 Year.	+1 Year.	-1 Year.	+1 Year.
Debility and Malnutrition (including Underweight), ...	505	169	375	184
Birth Debility, ...	75	—	312	—
Prematurity, ...	66	—	69	—
Marasmus, ...	12	3	6	1
Diseases of Digestive System, ...	2	2	6	—
Diseases of Respiratory System, ...	4	2	1	1
Measles, ...	—	—	—	—
Whooping-cough, ...	—	—	—	—
Rickets, ...	23	162	17	129
Others, ...	—	10	12	2
TOTAL, ...	687	348	798	317

### SUPPLY OF MILK AND MEALS TO NECESSITOUS MOTHERS AND CHILDREN.

During the year supplies of milk continued to be given to expectant and nursing mothers, and to children up to five years

of age, under the following general conditions:—(1) Regular attendance at a Child Welfare Centre; (2) when the case was necessitous; and (3) when a supply of milk was certified by the Medical Officer of the Centre to be required on the grounds of health.

Except where conditions of health required a more frequent attendance, infants are not expected to attend more frequently than once a fortnight, and toddlers once in six weeks.

While compliance with above general conditions is usually required, exception is made where a mother or child, on first attendance at an infant consultation, presents conditions of health which suggest that an immediate grant of milk may be desirable or necessary.

The following table summarises the applications and grants for the year 1930:—

			Applications Granted.		Applications	Total.
			Free.	At Reduced Price.	Refused.	
Fresh Milk,	...	...	38,302	2,318	687	41,307
Dried Milk	...	...	131	12	—	143
			38,433	2,330	687	41,450

These totals represent the number of individuals included in the applications. Grants, when made, are mainly for a period of six weeks at a time.

(a) *Fresh Milk*.—The following table further analyses the number of applications for fresh milk granted during the year:—

ORIGINAL APPLICATIONS.				
Rate charged to Applicant.	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under 5 years.	Total Number of Pints ordered.
Half-Price, ...	228	118	134	10,584
Free, ...	3,466	1,759	2,082	161,295
	3,694	1,877	2,216	171,879
REPEAT APPLICATIONS.				
Half-Price, ...	1,512	304	1,762	86,466
Free, ...	25,368	6,776	27,685	1,446,744
	26,880	7,080	29,447	1,533,210
TOTALS.				
Half-Price, ...	1,740	422	1,896	97,050
Free, ...	28,834	8,535	29,767	1,608,039
	30,574	8,957	31,663	1,705,089

This table shows that 3,694 original applications were granted during the year for supplies of fresh milk, covering 1,877 expectant

or nursing mothers, and 2,216 children under five years of age, or, together 4,093 individuals. The repeat applications of these families and of those previously on the roll number 26,880, making a total of 30,574 applications granted. The total quantity of fresh milk ordered was 1,705,089 pints, and the cost £14,585.

Certificates for grants of fresh milk were given by the medical officers at the various Centres for the following reasons:—

#### SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS FOR FRESH MILK.

Diseases.	Mothers.		Children.		Total.
	Expectant.	Nursing.	-1 year.	-5 years.	
Debility, ... ..	822	144	152	441	1,559
Progressing, ... ..	—	—	247	298	545
Insufficiency of Breast Milk, ...	—	7,664	—	—	7,664
Child losing Weight, ... ..	—	—	62	356	418
Child under Weight, ... ..	—	—	5,842	19,080	24,922
Child's Weight stationary, ...	—	—	57	303	360
Malnutrition, ... ..	—	—	37	49	86
Marasmus, ... ..	—	—	—	—	—
<i>Debility—after—</i>					
Infectious Diseases, ... ..	—	—	132	685	817
Other Diseases, ... ..	140	8	417	1,164	1,729
<i>Infectious Diseases—</i>					
Measles, ... ..	—	—	6	37	43
Whooping-cough, ... ..	—	—	13	48	61
Chickenpox, ... ..	—	—	3	6	9
<i>General Diseases—</i>					
Anæmia, ... ..	114	3	2	6	125
Rickets, ... ..	—	—	107	2,051	2,158
<i>Diseases of Respiratory System—</i>					
Bronchitis, ... ..	6	—	13	24	43
Pneumonia, ... ..	—	—	1	12	13
<i>Others—</i>					
Enteritis, ... ..	—	—	3	9	12
Albuminuria, ... ..	56	—	—	—	56
Influenza, ... ..	—	—	—	—	—
Totals, ...	1,138	7,819	7,094	24,569	40,620

(b) *Dried Milk.*—During the year supplies of dried milk were also given in suitable cases, the brands in use being “Glaxo” and “Ostermilk,” the number of applications received being as follows:—

	Number of Families.	Number of Expectant and Nursing Mothers.	Number of Children under five years.	Number of Packets Ordered.
Original Applications ...	89	—	90	141
Repeat „ ...	892	—	894	1,584
Total, ...	981	—	984	1,725

While the same scale of "necessitousness" is applied to applications for dried milk as to applications for fresh milk, the conditions of grant are somewhat different, for, while grants of fresh milk are refused to families whose income is over the scale, supplies of dried milk may be given at the wholesale rate. The following summary shows the number of packets and the amount recovered, as well as the loss falling upon the Corporation, for the supplies of dried milk issued under these conditions :—

Price per Packet.		Number of Packets Issued.	Cost to Corporation.	Amount Recovered.	Gain or Loss to Corporation.
Full Price, ...	...	988	£66 16 7	£75 1 3	+£8 4 8
Part Price, ..	...	56	3 14 8	2 16 0	-0 18 8
Free, ...	...	681	45 15 9	—	-45 15 9
Total, ...	...	1,725	£116 7 0	£77 17 3	-£38 9 9

In all, 1,725 packets were distributed under the scheme, of which 988 were charged at full price, 56 at part price, while 681 were given free, the net cost to the Corporation being £38 9s. 9d.

The reasons given in the medical certificate forms for the free and reduced price grants are shown in the following summary :—

#### SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS FOR DRIED MILK.

Diseases	Mothers.		Children.		Total.
	Expectant	Nursing.	-1 Year.	-5 Years.	
Debility, ...	—	—	1	—	1
Progressing, ...	—	—	2	—	2
Insufficiency of Breast Milk,	—	1	—	—	1
Child Losing Weight, ...	—	—	1	—	1
Child Under Weight, ...	—	—	133	—	133
Child's Weight Stationary,	—	—	—	—	—
Malnutrition, ...	—	—	2	—	2
Debility after Infectious dis-	—	—	—	—	—
eases, ...	—	—	2	—	2
Do. other diseases,	—	—	1	—	1
Anæmia, ...	—	—	—	—	—
Whooping-cough, ...	—	—	—	—	—
Totals,	—	1	142	—	143

*Economic Conditions.*—The following summary shows the conditions under which applications came within the scale of allowances :—

<i>Applications Refused—</i>					
Income over scale,	...	...	...	...	687
<i>Applications granted at half-price,</i>	...	...	...	...	2,330
<i>Carry forward</i>					3,017

Brought forward, 3,017

*Applications granted free—*

On Unemployed Relief Scale, ... ..	8,882
Parish and Health Insurance, ... ..	1,219
Parish and Pension, ... ..	467
Illegitimacy, ... ..	470
Employed full-time, but under Scale, ...	2,049
Waiting Labour Bureau and Parish, ...	592
Employed part-time, ... ..	804
Pension only, ... ..	191
Bureau only, ... ..	22,260
Deserted Wife, ... ..	589
Health Insurance, ... ..	69
Pension and Health Insurance, ... ..	19
Compensation, ... ..	155
Labour Bureau and Pension, ... ..	269
Labour Bureau and room let, ... ..	321
No Income, ... ..	46
Strike pay, ... ..	1
Room let only, ... ..	2
Family earnings, ... ..	21
Family earnings and Pension, ... ..	7
	<hr/>
	38,433
	<hr/>
	41,450
	<hr/>

## SEWING, &amp;c., CLASSES.

At the Child Welfare Centres where facilities are available sewing and other work classes and social meetings for mothers are organised by the staff throughout the winter months, and these have become very popular.

Centre.	Nature of Class.	Period.	Day and Hours.	Average Attendance.
Cowcaddens	- Sewing - -	- Nov. to Mar.	Mon., 7 p.m.	30
Do.	- Play Centre - -	- Oct. to Mar.	Wed., 6 p.m.	40
Do.	- Cookery Class - -	- Nov. to Mar.	Mon., 7 p.m.	30
			(once monthly)	
Partick	- Sewing - -	- Oct. to Mar.	Tues., 7 p.m.	20
Port Street	- Sewing, &c. - -	- Sept. to Mar.	Thurs., 2 p.m.	40
Maryhill	- Sewing - -	- Oct. to Mar.	Tues., 7 p.m.	50
Do.	- Play Centre - -	- Nov. to Mar.	Thurs., 7 p.m.	100
Do.	- Mothers' Club - -	- Oct. to Mar.	Last Friday each month, 7.30 p.m.	50
Springburn	- Sewing - -	- Nov. to Mar.	Tues., 7 p.m.	14
Kingston	- Sewing - -	- Oct. to Mar.	Thurs., 7.30 p.m.	38
Shettleston	- Sewing - -	- Oct. to Mar.	Thurs., 7.30 p.m.	38
Do.	- Play Centre - -	- Oct. to Mar.	Mon., 7.30 p.m.	30
Bridgeton	- Mothers' Club - -	- Oct. to Mar.	Wed., 7 p.m.	100
Hutchesontown	- Sewing - -	- Oct. to April	Tues., 2.30 p.m.	12
Arklet Road	- Sewing - -	- Oct. to Mar.	Tues., 7 p.m.	50
Do.	- Singing - -	- Oct. to Mar.	Thurs., 7 p.m.	15
Do.	- Home Nursing - -	- Oct. to Mar.	Thurs., 7 p.m.	12
Do.	- Fathers' Council - -	- Oct. to Mar.	Fri., 7 p.m.	30
Govan Town Hall	Sewing - -	- Oct. to Mar.	Thurs., 7 p.m.	37



As will be seen from the following syllabus for the Bridgeton Mothers' Club for the winter session 1930-31, the course entails a considerable amount of time on the part of those who co-operate in this most useful and practical method of assisting in the welfare movement.

### SYLLABUS OF LECTURES AND DEMONSTRATIONS.

MOTTO FOR THE SESSION : "Think of the best, work for the best, expect the best."

Wednesday,			
1—Enrolment Night	... ..	Introductory talk on session's work.	
8—Lecture: A day in the life of the expectant mother	... ..	Practical examples of suitable diet and clothing.	
15—Lecture: Home Nursing—Demonstration in bed-making	... ..	The Nurse herself, the Patient, Bathing, Feeding, General Rules.	
22—Cooking Demonstration	... ..	Three meals for the family.	
29—Hallowe'en Social. Tickets, 9d.	... ..	We entertain ourselves. Prizes for best solos or readings.	
5—Lecture: A day in the life of the Infant. Early impressions	... ..	Demonstration of bathing, clothing, test weighing.	
12—Cooking Demonstration	... ..	Some cheap savouries.	
19—Lecture: Your child and character training	... ..	Obedience, Habits—some diet rules. (Mothers invited to take part in discussion.)	
26—Lecture: A day in the life of the Nursing Mother	... ..	Diet and Elimination—Rest and Sleep—Exercise and Recreation—Gen. Hygiene—The failure of breast milk.	
3—Cooking Demonstration	... ..	Mothers choose what is to be made.	
10—Social and Fancy Dress Dance. Ticket, 1s.	... ..	Prizes for best costumes. Continuous Buffet.	
17—Lecture: Your child and character training	... ..	Fear, Precocity, Naughtiness. (Mothers invited to take part in discussion.)	
24—Cooking Demonstration	... ..	Christmas and New Year fare.	

### CHRISTMAS AND NEW YEAR HOLIDAYS.

14—New Year Party. Admission by invitation	... ..	Mothers are guests of Superintendent and Lady Helpers.	
21—Lecture: Your child and character training	... ..	The enquiring mind. The parent who shirks and fabricates.	
28—Cooking Demonstration	... ..	Some tea-time cakes and scones.	
4—Lecture: Home Nursing. A few simple Invalid Diets	... ..	Care of sick room—Disposal of Excreta—Care of Linen, &c.	
11—Lecture: Accidents and Illnesses of Childhood	... ..	Cold, Croup, Convulsions. Demonstration of baths, poultices, fomentations, &c.	
18—Social Meeting. Ticket, 9d.	... ..	A limited number of fathers may come. Programme to be arranged.	
25—Lecture: The danger of dirt, dust and flies	... ..	Some methods of keeping food, especially in hot weather.	
4—Cooking Demonstration	... ..	Mothers choose what is to be made.	
11—Lecture: Accidents and illnesses of childhood	... ..	Bruises, burns, rashes, thrush, starch, poultices, &c.	
18—Lecture: A day in the life of the toddler	... ..	Feeding, Play, Sleep, Teeth Care, Diets for growth.	
25—Closing Social. Ticket, 1s.	... ..	Presentation of Prizes.	

Prizes for Attendance. Prizes given for best sewing or Knitting done at the Class. Money taken for Bank at each class. Garments cut out. All second-hand material to be washed and unpicked.

*Fathers' Councils.*—Since the Fathers' Council was formed in Govan district two or three years ago a series of talks has been arranged during each winter. During 1930 a similar association was begun in connection with the Bridgeton Child Welfare Centre, a lecture being given each month and finishing in March with a social evening. These activities, the Superintendent reports, have been so much appreciated

that the men themselves have formed a committee and appointed office-bearers to carry on the organisation in future. The average attendance at last winter's course was 40.

### ANTE-NATAL CONSULTATIONS.

*Glasgow Royal Maternity Hospital.*—The total number of cases attending the ante-natal dispensary for the first time was 5,200 during 1930, compared with 4,742 in 1929, while the total attendances during the respective years were 12,201 and 10,355. During 1930 3,447 cases were treated to a termination in delivery, of which 1,159 were attended in their own homes.

The number admitted to the ante-natal wards during 1930 was 1,385, compared with 1,141 in 1929.

At the infant consultations held at the Maternity Hospital there were 7,387 attendances, as compared with 7,502 during the previous year. The first attendances numbered 1,011.

#### ANTE-NATAL DISPENSARY—

	1928.	1929.	1930.
Number attending for first time, ...	4,431	4,742	5,200
Total attendances, ... ..	9,750	10,355	12,201
Number treated to a termination, ...	2,975	3,113	3,447
Number sent to Hospital—			
(a) For confinement, ... ..	1,689	1,781	1,845
(b) „ miscarriage, ... ..	74	77	109
(c) „ ante-natal treatment, ...	348	373	508
(d) „ ante-natal treatment and confinement, ... ..	209	185	292
(e) For ante-natal treatment and miscarriage, ... ..	29	23	42
Number treated on District—			
(a) For confinement, ... ..	964	1,036	1,144
(b) „ miscarriage, ... ..	10	11	15

#### ANTE-NATAL WARDS—

Average number under treatment, ...	32	31	46
Number admitted, ... ..	1,172	1,141	1,385
Total days, ... ..	11,772	11,249	16,755
Condition on dismissal—			
(1) Recovered, ... ..	281	262	299
(2) Improved, ... ..	101	184	203
(3) Confinement completed, ...	672	635	795
(4) Died, ... ..	7	6	—
(5) No change, ... ..	94	60	74

#### INFANT CONSULTATION—

First Attendances, ... ..	1,004	1,059	1,011
Subsequent Attendances, ... ..	6,076	6,443	6,376
Total, ... ..	7,080	7,502	7,387

In addition, Ante-natal Clinics are held at nine of the Corporation Consultation Centres. Altogether there were 663 clinic sessions held

at the centres during 1930, compared with 583 during the previous year. Additional sessions have been arranged at Partick and Hutchesontown. The total number of primary attendances during 1930 was 3,602, compared with 2,992 during the preceding year, while the respective figures for subsequent attendances are 13,366 and 10,882. The total attendances, 16,968, are higher by 3,094. The number of consultations and attendances at each centre are shown in the following table.

### ATTENDANCES AT ANTE-NATAL CLINICS, 1930.

	No. of Clinic Sessions.	No. of Attendances.		
		Primary.	Subsequent.	Total.
Partick, ... ..	100	373	1,273	1,646
Cowcaddens, ... ..	52	301	1,268	1,569
Maryhill, ... ..	50	267	1,099	1,366
Springburn, ... ..	51	302	1,184	1,486
Orr Street, ... ..	50	359	1,179	1,538
Shettleston, ... ..	66	352	1,536	1,888
Hutchesontown, ... ..	103	604	2,077	2,681
Govan, ... ..	98	622	1,864	2,486
Elderpark, ... ..	93	422	1,886	2,308
	663	3,602	13,366	16,968

The following tables show (1) the age of mothers who attended and (2) the conditions requiring attention which were found:—

Ages of Mothers.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutche-son-town	Shett-leston	Govan	Elder-park	Totals.
-20	15	23	13	8	14	32	12	38	20	175
-25	94	60	64	68	88	165	81	133	92	845
-30	90	85	91	87	83	173	107	171	101	988
-35	88	61	51	79	94	129	90	146	99	837
-40	68	42	38	42	59	60	40	85	78	512
-45	16	15	6	15	7	19	10	20	18	126
45+	—	—	—	—	—	—	—	1	—	1
Not Pregnant,	3	15	4	5	13	27	11	27	13	118
	374	301	267	304	358	605	351	621	421	3,602

*Note.*—Cases transferred from Partick to Springburn. (1) from Orr Street to Adelphi Street (1) from Govan to Springburn (1); from Elderpark to Partick (1); and from Shettleston to Partick (1)

Conditions Found	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shett-leston	Hutche-son-town	Govan	Elder-park	Totals.
Venereal Disease,	9	6	8	7	3	6	23	13	7	82
Varicose Veins,	59	83	30	25	46	63	40	40	35	421
General Debility,	73	79	15	17	99	55	225	47	80	690
Cardiac Disease,	9	11	9	11	29	6	28	12	29	144
Hyperemesis										
Gravidarum,	2	—	—	2	4	—	2	8	2	20
Alimentary										
Conditions,	107	146	62	—	172	110	111	113	76	897
Dentition (Bad),	108	77	48	63	58	128	92	270	138	982
Contracted Pelvis,	12	93	6	6	19	12	11	21	15	195
Kidney Disease										
(Albuminuria),	27	56	52	52	59	32	151	86	40	555
Respiratory										
Disease,	22	37	6	13	53	13	46	35	19	244
Hæmorrhage,	5	—	3	2	8	15	25	19	18	95
No apparent										
disease,	28	—	44	46	20	52	88	39	28	345
Other conditions,	33	499	41	122	73	51	30	52	31	932
	494	1,087	324	366	643	543	872	755	518	5,602

The conditions found on medical examination are enumerated in the above statement, but as in many cases two or three causes of illness were present, the total number of conditions is much in excess of the number of mothers. The most frequent conditions requiring attention were those of the alimentary system (including constipation), general debility, anæmia, varicose veins, and albuminuria.

As in former years, about 17 per cent. were primiparæ, as shown in the following summary :—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Primiparæ ...	62	48	66	43	74	42	106	96	52	589
Multiparæ ...	309	238	197	256	271	298	472	498	356	2,895
Total,	371	286	263	299	345	340	578	594	408	3,484

The results, so far as known, as to whether pregnancy resulted at full term, prematurely, &c., are here given, together with the number of still-births :—

#### PREVIOUS YEAR'S CASES TERMINATED IN 1930.

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Alive, ...	75	65	64	70	63	78	141	137	86	779
Still-Births, ...	2	2	3	2	2	2	1	2	4	20
Full-term, ...	76	66	62	69	64	78	140	139	90	784
Premature, ...	1	1	5	3	1	2	2	—	—	15
Abortion or Miscarriage, ...	1	1	2	2	—	—	1	—	—	7
Left District and no trace, ...	2	2	2	2	3	1	—	6	1	19
Not Pregnant, ...	2	3	2	4	4	—	—	—	—	15
	82	73	73	80	72	81	143	145	91	840

Note.—Cases transferred from Cowcaddens to Springburn (2).

#### 1930. CASES.

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettle-ston	Hutcheson-town	Govan	Elder-park	Totals.
Alive, ...	243	219	176	205	226	204	377	412	284	2,346
Still-Births, ...	9	9	7	8	5	15	9	23	6	91
Full-term, ...	250	220	168	191	222	215	369	429	286	2,350
Premature, ...	2	8	15	22	9	4	17	6	4	87
Abortion or Miscarriage, ...	6	7	5	4	3	11	11	8	4	59
Left District and no trace, ...	6	4	2	—	1	3	7	4	—	27
Died before Termination, ...	—	—	—	—	—	—	—	1	—	1
Not Pregnant, ...	3	15	4	5	13	11	27	27	13	118
Not Terminated, ...	107	47	73	82	110	107	174	146	114	960
	374	301	267	304	358	351	605	621	421	3,602

Among the 3,302 patients whose pregnancy terminated in 1930, 19 deaths occurred, which is equivalent to a death-rate of 5·8 per thousand births. The rate for the previous year was 4·5. The causes of death were as follows:—Puerperal fever, 9; accidents of pregnancy, 1; puerperal hæmorrhage, 2; puerperal albuminuria and convulsions, 2; “other accidents of child-birth,” 2; heart disease, 2; and from ulcer of the duodenum, 1.

Of the deaths from puerperal fever, two were uncomplicated; one was certified as septic incomplete abortion at five months, with pelvic cellulitis, thrombo phlebitis and septic arthritis; one followed rupture of lateral vaginal fornix during confinement; one was a twin pregnancy failed forceps delivery before admission to hospital, but forceps delivery carried out in hospital; one had septiciæmia and pelvic cellulitis following failed forceps delivery; one was complicated with septic endometritis and broncho-pneumonia; one had broncho-pneumonia; and one died of infective endocarditis and cerebral embolism.

The total number of still-births, 111, occurring among the pregnancies included in this analysis represents a rate of 3·5 per cent., which may be compared with the average of 4·2 for the City generally. The percentage of still-births among cases attended during the previous year was 4·6.

A similar comparison as to whether the births occurred at full time or otherwise shows that during 1930 the premature births formed about 3·1 per cent. of the total, as compared with 3·7 per cent. for the previous year. Abortions equalled 2·0 per cent. of the pregnancies, compared with 1·9 during 1929.

The month at which the first attendance was made at the clinic is given below, and shows that almost one-half attended before the seventh month, and the remainder from the seventh month onwards.

Month of Attendance.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Shettles-ton	Hutcheson-town	Govan	Elder-park	Totals.
1 ...	1	—	—	—	—	6	1	—	—	8
2 ...	13	6	4	15	17	41	39	6	5	146
3 ...	26	13	24	27	29	30	49	25	21	244
4 ...	32	17	30	29	31	38	61	41	31	310
5 ...	53	45	32	43	44	42	88	39	54	440
6 ...	62	70	36	66	71	42	122	74	79	622
7 ...	70	77	62	71	81	69	121	140	90	781
8 ...	66	48	41	40	51	56	82	146	70	600
9 ...	48	10	34	8	21	16	15	123	58	333
Not Pregnant,	3	15	4	5	13	11	27	27	13	118
	374	391	267	304	358	351	605	621	421	3,602

A paper, prepared by Dr. MacCunn and Dr. Wylie, both medical assistants under the Child Welfare Scheme of the Department, and published in *The Medical Officer*, is introduced here because it describes fully the staffing and detailed routine which has been evolved in the scheme for ante-natal care in Glasgow.



### ANTE-NATAL CARE.

In Glasgow a large number of women fall into the category of those for whom no ante-natal care is available unless it be provided by the Local Authority. Less than half the confinements in the City are attended by doctors (40·1 per cent. in 1925 to 45·7 per cent. in 1928). The remaining cases are attended in their own homes by midwives, or by the outdoor service of the Maternity Hospital, or are delivered in the wards of the Maternity and Parish Hospitals or other institutions. Obviously the medically attended births are concentrated in the residential districts, so that in the industrial and slum areas the proportion of doctors' cases is extremely low. Even among these, ante-natal supervision is often inadequate, frequently because the expectant mother puts off booking a doctor till pregnancy is far advanced. Cases attended wholly by midwives receive practically no ante-natal care that is of any value. A proportion of the Maternity Hospital cases attend the ante-natal dispensary, but many women escape the net of ante-natal supervision altogether, and either send for the outdoor staff or present themselves for admission after labour has set in. This also occurs in the case of the Parish Hospitals. Many of these women who seek advice only at the eleventh hour are already well on the way to becoming obstetric disasters.

In the four centres under our own care, the attendance at birth for 776 cases in 1929 was as follows:—

Doctor.	Midwife.	Midwife and Doctor.	Institution.	Outdoor Maternity.
6%	57%	3%	18%	16%

It is obvious, therefore, that the ante-natal clinic under the Local Authority has an important part to play. That it supplies a felt want is seen by the great increase in the scope of the work since it was initiated in 1923.

This is clearly shown by the figures:—

	1923	1928	1929
Number of consultations, ...	202	503	583
Number of primary attendances, ...	1,052	2,651	2,992
Number of subsequent attendances,	2,274	9,142	10,882
Total, ...	3,326	11,793	13,874

During 1929, twelve consultations were held weekly at nine different centres.

While we do not claim that the work done at these centres differs essentially from that carried out elsewhere, it may be of value to medical officers who are endeavouring to put into practice the recommendations of the Ministry of Health Memorandum of 1929\* if we describe in detail the routine that has been employed in Glasgow for several years. In the following account we have described the procedure in the four centres directly under our own care—Partick Shettleston, Springburn, and Maryhill. These are all situated in industrial districts, but, with the exception of Partick, which lies along the

docks, they do not contain congested slums. Unemployment is common in all four districts.

*Staff of the Clinic.*—The personnel of the ante-natal clinic consists of a clerkess, two or three nurses (according to the size of the clinic), and the medical officer, who, in all the clinics under the Glasgow Corporation, is a woman. The nurses are the health visitors for the districts from which the patients are drawn, and the doctor is usually the clinical officer of the child welfare consultations. This is of importance, for the health visitor or doctor has valuable opportunities of finding out that a mother is pregnant, during district visiting or attendance at an infant clinic. The mother is then invited to attend the ante-natal clinic. Moreover, the patients are more inclined to come when they are acquainted with the medical and nursing staff, and have not to face total strangers.

The duties of the clinic are allocated as follows:—

The clerkess is responsible for recording the non-medical particulars of each patient. This includes name, address, maiden name, age, age at marriage, size of house, and number of occupants. These facts are entered on the case sheet, and the patient's name, address and age are entered in the register of cases, and in an alphabetical index. The patient is given a card with her name, address and number in the register, and a named slip of paper to hand, with a specimen of her urine, to the nurse. The patient then passes into the waiting-room. In addition to entering these particulars at the patient's first visit, it is the clerkess's duty to keep a record of subsequent attendances and grants of milk. She also enters on the case sheet and in the register the result of the pregnancy (miscarriage, still-birth, live-birth, premature, or full time, and sex of child), and the attendance at birth (doctor, midwife, or institution). After the birth of the child, all case sheets are filed, and are kept at the clinic so that they are immediately available for a subsequent pregnancy.

The nurses (all of whom hold the C.M.B. certificate as well as a recognised training) prepare the ante-natal consulting-room before the hour of the clinic. At the different centres the duties allocated to each nurse vary in detail. It is obviously desirable that they should exchange duties from time to time.

The first nurse makes a record of the medical history of the patient, including the family history and the health in childhood and before marriage. She also writes down the menstrual history and the date of the last period, the probable arrangements for confinement, and a complete history of previous pregnancies. This is often no easy task when the family consists of a dozen or more, and numerous miscarriages have to be included. A note is also made of the duration of breast feeding of each child.

The second nurse tests the urines and enters the result in a special section of the case sheet. She interviews the return cases, and decides whether it is necessary for them to see the medical officer or whether it is sufficient to continue the treatment prescribed at a previous con-

sultation. The treatment of minor ailments and the giving out of medicines fall to her share, and she is also responsible for seeing that the patients are undressed and in readiness to go into the doctor's room. To an intelligent and sympathetic nurse, these conversations with the expectant mothers afford an invaluable opportunity for winning the women's confidence, and so acquiring insight into the domestic difficulties of the working mother.

The third nurse assists the doctor and remains in the consulting-room throughout the clinic. In many centres the doctor has no nurse in attendance, but the present writers are of opinion that when the numbers are large, when blood is taken for the Wasserman reaction as a routine, and when vaginal discharges are treated, much time may be saved by having a nurse constantly at hand. Her duties are to help patients on and off the table, to adjust the table for the recumbent or modified lithotomy position, to sterilise instruments, needles, and gloves, and to prepare probes and tampons. She is given opportunities of examining the patients, and so improving her skill in abdominal palpation and diagnosis.

*Medical Examination.*—The procedure adopted by us in the routine examination of the patient is no doubt similar to that carried out elsewhere. The patients are undressed on their first visit and come into the consulting-room clad in a dressing gown of washable material, bedroom slippers, and, in winter, a warm red blanket round their shoulders. The case sheets are arranged so that the first section contains a record of the patient's symptoms, with special reference to digestive disturbances (heartburn, vomiting, and constipation), to urinary disturbances (frequent or painful micturition, inability to micturate, diminished output of urine, and other relevant facts such as headache, dimness of vision, epigastric or lumbar pain), to the occurrence of hæmorrhage or the presence of vaginal discharges. This is followed by a space devoted to the physical examination of the patient, including heart, lungs, teeth, and breasts, and the existence of such pathological conditions as varicose veins, piles, oedema, and sores of the external genitalia. It may be noted that if in the history of a previous confinement a woman has been unable to breast-feed her infant, either from insufficient breast milk, mastitis, or malformation or cracking of the nipples, every effort is made to encourage lactation in the later months of the existing pregnancy, and to prevent lesions of the nipple. The general physical survey is followed by a detailed obstetric examination. A number of patients come to the clinic to find out if they are pregnant (98 non-pregnant women attended the clinics in 1929). Only about 50 per cent. attend before the sixth month, and only 12 per cent. before the third month. These figures are comparable with those given by H. Harvey Evers †, who found that 7 per cent. attended before three months and 50 per cent. before six months. The majority of cases are extremely vague as to their menstrual dates, and are anxious to ascertain the expected date of their confinement. The first point, therefore, is to estimate the duration of the pregnancy from the height of the fundus, and if the patient is

far advanced, to determine the presentation and position of the fœtus and the position of the fœtal heart. We are in agreement with Evers that vaginal examination may be entirely dispensed with in a number of cases, and we make an internal examination only in (a) primiparæ; (b) multiparæ with histories of previous difficult labours; (c) cases where it is impossible to determine the presentation by abdominal palpation; (d) cases of hæmorrhage; or (e) cases of purulent vaginal discharge. In primiparæ and cases with bad histories, a pelvic examination is made and the relative size of the fœtal head and maternal pelvis is estimated. Pelvimetry is helpful, and in some centres is carried out as a routine practice. We have found it frequently desirable in primiparæ and in nervous patients to postpone vaginal examination till a subsequent visit, unless they are more than seven months pregnant on their first examination. We then investigate any complaint of vaginal discharge. The patient is placed in a modified lithotomy position, a speculum is passed, and the cervix is examined. Smears are taken from urethra and cervix, and are sent for examination for the gonococcus to the City laboratory. The examination of the patient is completed by withdrawing blood for a Wasserman (or Kahn) test. It is very exceptional to encounter any difficulty in obtaining the patient's consent to this being done.

At the conclusion of the examination of the patient, treatment and advice are given, and in some cases the the clinic medicines are prescribed. This stock includes cod liver oil emulsion, iron tonic, Parrish's Syrup, Easton's Syrup, a diuretic mixture, liquid paraffin, and a bismuth-and-soda mixture. The bismuth mixture is indeed the chief attraction of the ante-natal clinic. One penny is paid for each glass bottle supplied. Before the patient leaves the consulting-room, the date for her next visit is arranged. This date is marked on her card, and is also entered on her case sheet so that the clerkess, when putting away the sheets, may file them under the appropriate dates. Healthy patients who are less than six months pregnant attend every three or four weeks; those who are more than six months pregnant attend every fortnight; abnormal cases are seen more frequently.

All patients are seen and advised by the health visitor on their subsequent visits, and on each occasion their urine is examined and the result entered on the case sheet. From time to time they see the doctor, even if they appear well. They are always sent to the doctor's consulting-room if any abnormal symptom is discovered. In all cases a complete obstetric examination is made about the 36th week of pregnancy, and if there is any question of abnormality, the case is re-examined before term. On her last visit to the clinic the patient is asked if the arrangements for the confinement are complete. Believing with Johnstone‡ that "the care of the infant of each generation is the first step in the ante-natal care of the parents of the next generation," we instruct each mother on her final visit before her confinement to return with the baby at the earliest suitable date. On her post-natal visit a brief summary of her labour is entered on the case sheet. When home circumstances permit, women who have been in poor health, or have had abnormal confinements, are recom-



mended for a fortnight's convalescence at the Corporation Home at Garscube.

The following are the conditions found in all the patients attending the Corporation ante-natal clinics in 1929:—

Venereal disease, ... ..	106
Varicose veins, ... ..	345
General debility, ... ..	527
Cardiac disease, ... ..	119
Hyperemesis, ... ..	20
Alimentary conditions, ... ..	704
Carious teeth, ... ..	772
Contracted pelvis, ... ..	144
Albuminuria, ... ..	423
Respiratory diseases, ... ..	231
Hæmorrhage, ... ..	71
No apparent disease, ... ..	316
Other conditions, ... ..	585

In studying the above table, it should be remembered that two or more conditions were often present in the same patient, so that the number of conditions found far exceeds the total number of cases. The table is self-explanatory, but it may be desirable to amplify a few of the headings.

“General debility” is largely contingent on the poverty and unemployment in the homes, and on the size of the family; it is often synonymous with malnutrition due to underfeeding. Cases of debility and anæmia, associated with “nervousness” and insomnia, have been treated by ultra-violet rays at the two Corporation light clinics with considerable success.

“Alimentary conditions” include constipation, which is often intractable, and the more severe cases of dyspepsia. Closely correlated with the figures for digestive disturbances are the figures for carious teeth. The septic state of the women's mouths is often appalling, and it is extremely difficult to persuade them to undergo dental treatment unless they are suffering from toothache. In West Govan a dental clinic held in the centre has done excellent service in treating expectant mothers, and in educating them to a higher standard of oral cleanliness, and it is hoped that this scheme may be further extended by the unification of medical services under the Local Government (Scotland) Act.

“Contracted pelvis” includes many cases of mild deformity who deliver themselves normally. The high figure is an index of the prevalence of rickets, and the majority of such cases are drawn from such congested areas as Bridgeton and Cowcaddens, where the condition was found in seven per cent. and sixteen per cent. respectively.

The cases of albuminuria do not include patients who have transient hazes of albumen late in pregnancy, but are all cases in whom albumen is present on several occasions or in considerable amount. In the majority of these, albuminuria disappears as a result of dieting and active diuretic measures.



Respiratory conditions are chiefly chronic bronchitis, but a proportion of cases of pulmonary tuberculosis, usually of an extremely chronic type, is included. Such cases are referred to the tuberculosis officer, and are supervised by him as well as by the child welfare department.

“ Other conditions ” include a wide variety of inter-current diseases and abnormality, but a large number under this heading are cases of simple leucorrhœa.

*Venereal Disease.*—The patients suffering from venereal disease numbered 106, of whom 43 suffered from gonorrhœa, 62 from syphilis, and one from a mixed infection. A number of cases of syphilis were discovered by the routine testing of blood, and gave no typical history of still-births, premature labours, or neo-natal deaths. At all the centres, except two, venereal disease clinics are held weekly; at three centres the venereal disease clinic is carried on at the same hour as the ante-natal clinic by a second medical officer (also a woman); at two centres the same medical officer conducts both clinics; and at two centres the clinic is held in the same building, but at a different hour. Cases from the two centres mentioned above where no V.D. treatment is carried out are referred for treatment to the Corporation clinics at Black Street and Govan Town Hall respectively. The treatment of syphilis can be carried out efficiently at a weekly clinic, but the treatment of gonorrhœa is very much less satisfactory, as it is obviously futile to attempt to treat patients only at weekly intervals. Such cases, therefore, in addition to attending their own clinic weekly, are treated, if necessary, daily at Govan and Black Street V.D. dispensaries. It is of interest that a large number of patients come to the clinics complaining of intense discomfort due to infection of the genital tract by B. Döderlein. Such cases are treated at the ante-natal clinics weekly. As long ago as 1918, Comyns Berkeley § emphasised the importance of the co-operation between the clinical officers and the laboratory staff, especially in the treatment of venereal diseases. We are deeply indebted to Dr. R. M. Buchanan and his staff in the City Laboratory for the great amount of work done in connection with the ante-natal clinics.

*The Follow-up of Cases.*—In all districts a percentage of patients fail to return on the arranged date. The medical officer looks over the case sheets of defaulters, and arranges for a nurse to visit any special cases. The ordinary patients are given a week's grace, and if they still fail to come, a post-card is sent asking them to return. If the post-card fails to produce any response, all cases except the most straightforward are visited by the nurse in whose district the patient lives. Cases recommended for indoor hospital treatment are also visited within a few days to make sure that they have gained admission to the institution.

*Co-operation with Doctors, Midwives and Institutions.*—Not infrequently, at the time of her first visit to the clinic, the patient has made no arrangements for her confinement. She is always advised

to make her arrangements early. Often the clinical officer must decide whether it is desirable on medical grounds that her confinement should take place in hospital or whether she may remain at home. In the latter case, the patient is advised if the services of a doctor will be necessary or if a midwife may be employed. If the patient decides to call in a doctor, a letter is sent to him containing a résumé of the salient features of the pregnancy. Thereafter, if the doctor desires it, the expectant mother may continue attending the clinic, or she may attend the doctor instead. Midwives are also sent a brief report of the case. A midwife is always notified if her case is sent into hospital, and the reason for the removal of the patient from her care is given. This is in accordance with the recommendation of the Departmental Committee on the Training of Midwives || that "care should be taken to ensure that midwife and doctor are acquainted with the information gained by the medical officer of the clinic."

In all districts, the relations between clinic and midwife are harmonious, and the distrust with which the midwives formerly viewed the clinic has almost entirely disappeared. Friendly relations may be established by inviting the midwives of the district to an informal tea at the clinic. At such a meeting, the medical officer and the inspector of midwives have an opportunity of explaining the scope of the clinic work. Midwives are always encouraged to accompany their patients to the clinic and attend the consultation, but advantage is seldom taken of this opportunity. The excellent relations between the midwives and the public health clinic were proved recently at a meeting of Govan midwives, where the midwives suggested that they should refuse to book cases unless the patients were willing to attend the ante-natal clinic. On the same occasion several midwives said frankly that although undoubtedly they lost some patients yearly by the clinic doctor advising hospital care, yet they were thankful to be relieved of the responsibility of such cases. We are also fortunate in having the co-operation of many of the local practitioners. A number of parish and panel doctors send their cases to the clinics for ante-natal supervision, and in one district two young practitioners were sufficiently interested to ask if they might attend the consultations.

Letters recommending patients to hospitals are also given on the final examination at the clinic. The Corporation retains a number of ante-natal beds in the Glasgow Maternity Hospital, and these are available for patients requiring indoor treatment. Cases are also referred to the Maternity Hospital Outdoor Dispensary if a second opinion is desirable.

*Subsidiary Activities of the Ante-Natal Clinic.*—The voluntary worker is a great asset to the ante-natal clinic. At our own consultations the voluntary helpers make tea for the mothers. The supply of suitable articles of clothing also comes within the province of the voluntary helper, under the supervision of the health visitor. In all the clinics simple infant garments are displayed in a show case, and in almost all the centres a sewing class is held where the mother is encouraged to make many of the garments for the layette herself rather than

purchase the outfit ready made. A bundle containing one complete set costs five shillings; and a double bundle costs nine shillings. The latter consists of two knitted vests, two knitted belts, three napkins, two flannel barricoats, and two winceyette gowns. Extra items of clothing, second-hand or new, are sold at a low figure, the mother's poverty rather than the value of the goods controlling the price asked. Even although it may be nominal, a small charge is made for every article. Maternity bundles are supplied at all the clinics, and also by the inspector of midwives.

*Home Helps.*—A number of women are employed by the Corporation to act as home helps during the lying-in period. These women are carefully selected by the inspector of midwives and their duties are entirely domestic, i.e., housekeeping and cleaning, and the care of older children. The help is paid five shillings a day. A minimum payment of one shilling a day must be paid by the family employing the help, and the proportion rises according to the family wage. The balance is paid by the Corporation. This scheme is of real value, and the number of cases employing home helps has risen from 17 in 1925 (when it was initiated) to 195 in 1929.

The value of the work done in the ante-natal clinic is measured by its results. What are these results? The women themselves are convinced that they derive benefit from the clinics; this is shown by the rapid rise in the numbers attending, and by the fact that a patient who has attended during one pregnancy almost invariably returns on a subsequent occasion. The infants benefit: the standard of cleanliness and clothing among the children of ante-natal mothers is higher than in those of non-clinic mothers. Certainly the work done at the clinics is appreciated by the midwives, who in increasing numbers are sending their patients for examination. These points have their value, but the real test of the efficiency of ante-natal care is its effect on maternal mortality. In 1928 the maternal death-rate all over the City was 8.79 per thousand births. The rate for cases attending the clinics was 6.6 per thousand births. In 1929 the figures were 8.33 and 4.5 for the City and clinic cases respectively. The latter figure is encouraging.

When the ante-natal clinics have educated the working women to seek advice early in pregnancy, to carry out the advice given, and to attend regularly, obstetric disasters will be further reduced, and the results of ante-natal care will be even more apparent.

#### REFERENCES.

- \* Ministry of Health Memorandum, 145/M.C.W., 1929.
- † H. Harvey Evers, *Public Health*, November, 1926, pp. 51-55.
- ‡ R. W. Johnstone, *National Health*, September, 1927, p. 77.
- § Comyns Berkeley, *British Medical Journal*, 13th July, 1918, pp. 32-35.
- || Ministry of Health Report of Departmental Committee on the Training and Employment of Midwives, p. 50, para. 85.

#### MATERNAL DEATHS.

Altogether there were 200 deaths of women from causes associated with child-birth in 1930, compared with 190 during the previous year.

The maternal death-rate per thousand births was therefore 8·57, as against 8·33 during 1929. When compared with the rates for the preceding years, those of the last three years are comparatively heavy, most of the increase being due to the larger number of deaths from puerperal fever. The rate for puerperal fever in 1930, i.e. 2·78, is lower than it has been since 1927, because of the absence of serious outbreaks in maternity homes or wards, factors present in both 1928 and 1929. From year to year special reference has been made to the incidence of puerperal fever, and this year, owing to the great importance of this question, a full report on the epidemiology, bacteriology, and treatment of puerperal sepsis appears on pages 112 to 146.

Puerperal hæmorrhage as a cause of death has been more prominent in the group of maternal deaths during the past two years, the rate this year being 1·20 and for last year 1·10, against an average rate of 0·75 for the years 1921-28. Other diseases of parturition, with a rate of 1·20, are also well above the average of previous years. Altogether these two causes were responsible for 56 deaths, which, with 65 from puerperal fever, form two-thirds of the total maternal mortality of the city.

STATEMENT SHOWING MATERNAL DEATHS AND RATE PER 1,000 BIRTHS  
IN GLASGOW, IN THE YEARS 1921-1930.

	Rate per 1,000 Births											Deaths.
	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1930	
Abortion Miscarriage, - -	·30	·64	·49	·32	·39	·65	·55	·68	·61	·73	17	
Uncontrollable Vomiting, - -	·13	·14	·07	·20	·47	·41	·17	·47	·53	·09	2	
Ectopic Gestation, - -	·20	·11	·11	·16	·28	—	·08	·08	·17	·17	4	
Other Diseases and Accidents of												
Pregnancy, - -	·24	·32	·22	·39	·35	·04	·38	·21	·35	·21	5	
Puerperal Hæmorrhage, - -	·87	·88	·79	·39	·98	·61	·76	·63	1·10	1·20	28	
Other Accidents of Parturition, -	·54	·60	·75	·51	·67	·98	·89	·97	·96	1·20	28	
Puerperal Sepsis, - -	2·32	3·00	2·55	2·21	2·32	2·11	1·99	3·34	3·16	2·78	65	
Phlegmasia Alba Dolens,												
Embolism, - -	·13	·28	·15	·04	·24	·37	·30	·25	·22	·43	10	
Albuminuria of Pregnancy,												
Eclampsia, - -	·87	·78	1·31	·95	1·14	1·06	1·23	1·52	·66	1·20	28	
Other Diseases of Puerperium, -	·77	·81	·64	·67	·71	·41	·82	·63	·48	·56	13	
Puerperal Diseases of Breast, -	—	·04	—	—	·08	·04	·04	—	·09	—	—	
Totals—Glasgow, -	6·39	7·60	7·08	5·84	7·63	6·68	7·21	8·79	8·33	·857	200	
„ Scotland, -	6·38	6·60	6·42	5·82	6·16	6·40	6·43	6·98	6·87	6·95	657	

These increases in particular causes may be due to a more rigid adherence to the instructions for the classification of deaths, as albuminuria of pregnancy and eclampsia are responsible, this year, for a rate of 1·20, which is more in conformity with the rates for the years preceding 1929, which had a rate of only 0·66.

Mortality at child-bearing ages was shown in the report for last year to be increasing relatively to the total female mortality and in relation to the mortality of females from 15 to 45 years of age, quite apart from the fact that certification now includes more deaths as due to maternal causes. For this reason the special report by the Department of Health for Scotland on the information now being supplied to them for all maternal deaths is awaited with interest.



## ULTRA-VIOLET RAY CLINICS.

No alteration has taken place in the arrangements for light treatment of children suffering from rickets, malnutrition, &c. The number of diets held weekly at Cochrane Street and Govan Town Hall remain the same as at the end of last year.

The installation and the results of treatment have been fully dealt with in previous reports, so that only the records of numbers treated are here given in respect of 1930.

RECORD OF ATTENDANCES AND CONSULTATIONS DURING 1930.

		Number of Clinics held.	Children, -1 year. Number of Attendances.		Children, +1 year. Number of Attendances.		Mothers. Number of Attendances.		Total Number of Attendances.	
			Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Cochrane Street	-	150	71	503	449	7,726	23	163	543	8,392
Govan, - - -	-	150	55	620	253	5,261	46	664	354	6,545
		300	126 1,123		702 12,987		69 827		897 14,937	
			1,249		13,689		896		15,834	

AGES OF CHILDREN ATTENDING FOR THE FIRST TIME—

CHILDREN ATTENDING FOR THE FIRST TIME—						Cochrane Street.	Govan.
-1 year,	...	...	...	...	...	71	58
-2 years,	...	...	...	...	...	248	144
-3 "	...	...	...	...	...	112	53
-4 "	...	...	...	...	...	60	32
-5 "	...	...	...	...	...	29	15
+5 "	...	...	...	...	...	—	6
						<hr/>	<hr/>
						520	308
						<hr/>	<hr/>

## REASONS FOR TREATMENT OF CASES ATTENDING FOR FIRST TIME.

CHILDREN—										Cochrane Street.	Govan.	
Rickets.	{	1. Prophylaxis,	-	-	-	-	-	-	-	4	—	
		2. Early Rickets,	-	-	-	-	-	-	-	-	106	62
		3. Moderate Rickets,	-	-	-	-	-	-	-	-	134	45
		4. Marked Rachitic deformity,	-	-	-	-	-	-	-	-	78	73
Rickets c. Tetany,		-	-	-	-	-	-	-	-	3	4	
Debility after Infectious Disease,		-	-	-	-	-	-	-	-	25	13	
Debility after Acute Illness,		-	-	-	-	-	-	-	-	19	22	
Debility—weight stationary, or losing, or not thriving,		-	-	-	-	-	-	-	-	85	42	
Bronchitis,		-	-	-	-	-	-	-	-	15	8	
Malnutrition,		-	-	-	-	-	-	-	-	20	24	
Marasmus,		-	-	-	-	-	-	-	-	1	2	
Mentally Defective,		-	-	-	-	-	-	-	-	—	—	
Nervous Instability,		-	-	-	-	-	-	-	-	4	5	
Skin Diseases,		-	-	-	-	-	-	-	-	3	—	
Special,		-	-	-	-	-	-	-	-	23	1	
Cervical Adenitis		-	-	-	-	-	-	-	-	—	7	
										520	308	
MOTHERS—												
Pregnancy,		-	-	-	-	-	-	-	-	16	37	
Nursing Mothers,		-	-	-	-	-	-	-	-	7	9	
										23	46	



# INFANT VISITATION.

Under the scheme of infant visitation every birth is visited if the notification does not state that a medical practitioner has been in attendance, and the following table shows the record of those visited, together with certain information obtained :—

	1928	1929	1930
Inquiry cards returned, ...	17,919	17,661	17,670
Full information obtained,	16,969	16,786	16,968
Doctor found in attendance,	33	17	7
Wrong addresses, ...	—	—	—
Others, ...	917	858	695
Inquiry cards issued, ...	17,862	17,466	18,013

*Of those for whom full information was obtained—*

	1928	1929	1930
Legitimate, ...	15,872	15,500	16,081
Illegitimate, ...	1,041	1,099	1,210
Born at full term, ...	16,072	15,734	16,376
Premature births, ...	841	865	915

*Condition of Infant at Birth—*

Well nourished, ...	13,932	14,112	14,637
Fairly nourished, ...	1,574	1,171	1,318
Badly nourished, ...	695	580	592
Still-born, ...	712	736	744

*Nature of Feeding at First Visit—*

Breast, ...	13,524	13,264	13,680
Artificial, ...	1,550	1,695	1,891
Breast and Artificial, ...	542	415	493
Still born, ...	712	736	744
Dead at First Visit, ...	579	489	483
Adopted, ...	6	—	—

In addition to home visitation, the nurses attend the Child Welfare Consultations in their own districts. They thus have an opportunity of reporting to the doctor any illness or condition requiring medical treatment, and of following up the case afterwards to see that the treatment recommended is carried out.

The following series of summaries indicate the number of first and revisits undertaken, together with a record of conditions found:—

## FIRST VISITS.

	1928	1929	1930
Infants visited under 1 year of age,	15,392	15,283	15,529
Infants visited over 1 year of age,	—	—	—
Removed and new address not traced,	337	316	236
In hospital or nursery, ... ..	105	129	146
Dead, ... ..	640	571	563
Refused admittance, ... ..	2	—	5
Doctor in attendance, ... ..	41	13	8
Information refused, ... ..	24	10	4
Still-born, ... ..	675	735	681
Visits unnecessary, ... ..	212	128	98
Adopted, ... ..	33	54	52
Nursed out, ... ..	18	22	24
	<u>17,479</u>	<u>17,261</u>	<u>17,346</u>

## REVISITS.

	1928	1929	1930
Infants visited under 1 year of age,	1,225	1,151	1,062
Infants visited over 1 year of age,	2,646	2,286	2,073
	<u>3,871</u>	<u>3,437</u>	<u>3,135</u>
Removed and new address not traced,	972	1,101	1103
Out at time of visit, ... ..	202	159	197
In hospital or nursery, ... ..	25	20	27
Dead, ... ..	630	556	504
Adopted, ... ..	27	29	31
Refused admittance, ... ..	—	—	1
Doctor in attendance, ... ..	2	2	—
Visits unnecessary, ... ..	—	13	6
Nursed out, ... ..	16	13	31
Information refused, ... ..	3	—	1
Visits resented, ... ..	—	1	—
	<u>5,748</u>	<u>5,331</u>	<u>5,036</u>

The children found alive on the occasion of the first visit by the Health Visitor are classified in the following table under three groups:—

	Well.	Fair.	Bad.	Total.
1928, ... ..	13,617	1,658	117	15,392
1929, ... ..	13,840	1,326	117	15,283
1930, ... ..	14,031	1,379	119	15,529

Generally speaking, those classified as "well" on the occasion of the first visit were not revisited. The following table is a summary of results found at final visit:—

	Still Good.	Much Improved.	Slightly Improved.	No Improvement.	Worse.	Total.
1928, ... ..	3,051	813	5	2	—	3,871
1929, ... ..	2,879	538	19	1	—	3,437
1930, ... ..	2,775	312	37	11	—	3,135

## GLASGOW INFANT HEALTH VISITORS' ASSOCIATION.

Working in association with the Public Health Department is the Glasgow Infant Health Visitors' Association, to whom are reported children whom it is desirable to keep under observation during a longer period than is possible by the official visitors. The number of visitors fluctuates around 300.

As the period of visitation generally extends over the first twelve months of life, a complete year must elapse before the results of the visitation can be summarised.

The following is a summary of the results for the years 1925-1929:—

Year.	Year old.	Removed.	Dead.	Ceased to be Visited.	Visits Un- necessary	No In- formation	Visits Resented	No Visitor.	Total.
1925	2,259	242	224	26	18	6	4	2	2,781
1926	1,685	249	161	21	14	5	7	4	2,146
1927	1,717	244	225	5	10	1	6	2	2,210
1928	1,818	326	209	6	6	3	1	—	2,369
1929	1,871	308	193	6	10	3	4	1	2,396

## DOMESTIC HELPS.

Since the scheme for supplying Home Helps was inaugurated in Glasgow towards the end of 1924, there has been an increasing demand for their services. In the first year there were only 17 applications, while in 1930 the total had reached 204. The scale of payment is 5s. per day, which is guaranteed by the Corporation. Assistance of this kind for those who can pay this rate is arranged privately, and is not included in the records shown below. Quite a number are being placed in this way as the scheme becomes better known.

Payment for the services of helps is in accordance with a scheme of "necessitousness" based on the scale applicable to grants of milk and meals under the Child Welfare Scheme, with a minimum charge of one shilling per day. The following is a summary of the payments made for services rendered:—

Cases, 1930	Number of Days Attended, 1930	Rate per Day.	Amount Paid by Patient, 1930
104	1,437	1/-	£71 17 0
37	417	1/6	31 5 6
37	377½	2/-	37 15 0
15	139	2/6	17 7 6
5	48	3/-	7 4 0
3	16	3/6	2 16 0
3	26	4/-	5 4 0
1930, 204	2,460½		£173 9 0
1925, 17	246		£18 11 6
1926, 107	1,407		102 2 6
1927, 118	1,361		105 8 6
1928, 132	1,656½		129 11 6
1929, 195	2,476		195 2 6

During 1930, 49 individual helps attended 204 cases for a total of 2,460½ days, or an average of 12 days per case. The amount recovered in fees was £173 9s. The helps are remunerated at the rate of 5s. per day, so that the balance falling to be met by the Corporation was £441 13s. 6d.

### MATERNITY BUNDLES.

In connection with the Child Welfare movement a very definite need has been met by the issue of maternity bundles, and in accordance with the practice of recent years these are not issued until the birth actually takes place, as in necessitous cases to which they are issued, it was found that quite frequently the garments supplied were misused. In 1930 bundles, or part bundles, to the number of 800 were supplied, compared with 441 in 1929 and 428 in 1928. Receipts from those who could make a part payment amounted to £46 9s., as against £15 12s. received from this source during the preceding year.

### DAY NURSERIES.

Including the Phoenix Park Kindergarten, there are, as in previous year, six Centres with nursery accommodation. The total attendances of children at these Centres during 1930 was 35,160, in comparison with 37,012 during the previous year.

The following figures show the number of attendances, &c., at each Centre during the year:—

Nursery.	Number of Days open.	Total Attendances during the year.	Average.	Maximum number in one day.	Accommodation for.
Bridgeton, ... ..	241	7,740	32	43	40
Cowcaddens, ... ..	221	5,800	26	43	36
Phoenix Park Kindergarten, ... ..	186	4,651	24	29	31
Milton, ... ..	227	6,775	30	38	38
Hutchesontown, ... ..	250	6,053	24	34	38
Kingston, ... ..	217	4,141	19	30	30

Owing to the heavy prevalence of measles two or three of the nurseries were closed for short periods; Kingston, during January and February, Hutchesontown during February and March, while the attendances in November were reduced during the prevalence of chickenpox and whooping-cough. Cowcaddens day nursery was also closed for a period in January because of measles.

*Cowcaddens Day Nursery for ex-Nursery Children.*—This centre, which had been organised a year previously, has become so popular in the district that this year the number had been limited to children who had formerly attended the nursery. The play centre is held on Wednesday evenings from 6 to 7 p.m., and there are 58 on the roll, with an average attendance of 40. For half-an-hour the children play games, sing, and dance, and for the other half-hour they do handwork, painting, drawing, and paper-cutting. The work is carried on with the assistance of voluntary workers.

With regard to the kindergarten, Miss Winifred M. Anderson, the voluntary superintendent, submits the following notes :—

“Much appreciation has been shown on the part of parents at the physical improvement in their children, the improvement in speech and manners, their mental development, and their happiness at the kindergarten.

“Interesting appreciations have also been received recently from the headmasters of schools in the district to which some of the children have passed on. In one report the wish was expressed that a nursery school could be attached to every elementary school. In another, stress was laid on the great advantage which beginners coming from a nursery school had over those straight from home, resulting in their having moved up in less time.

“Special mention was made of the prompt and interested response to the teacher, the good manners, and the *esprit de corps* resulting from the nursery school training. There is always a waiting list, and sometimes a mother puts her baby's name down at a few months old in order that he may be sure of a place by the time he is two-and-a-half years old.”

### JUVENILE UNEMPLOYMENT CLASSES, &c.

The arrangement whereby girls from the Juvenile Unemployment Classes attend at certain of the Day Nurseries for training purposes was continued during the year. Each girl receives training in the general care of infants, and in laundry and kitchen work, over a period of one month; and the results of training, as furnished by the reports of the matrons, are shown below:—

#### *Training Completed—*

Work Satisfactory, ... ..	28
Work Unsatisfactory, ... ..	—
	<hr/> 28

#### *Training not Completed—*

Left to take up employment, ... ..	3
Attained 18 years and ceased to attend Juvenile Un- employment Classes, ... ..	1
Illness, ... ..	—
Other reasons (mainly unsuitability for the work), ... ..	—
	<hr/> 4
	<hr/> 32

Training was also given at the Day Nurseries to 23 pupils of the College of Domestic Science.

### COUNTRY HOMES.

The following analysis shows that 484 children were admitted under the Child Welfare Scheme to the three Country Homes during



the year, the two principal reasons for admission being rickets and malnutrition:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Rickets, ... ..	55	46	90	191
General Malnutrition, and Debility, ... ..	20	68	83	171
Bronchitis, ... ..	—	4	2	6
Debility after acute illnesses,	5	6	47	58
Anæmia, ... ..	36	8	7	51
Nervousness, ... ..	—	7	—	7
Others, ... ..	—	—	—	—
	116	139	229	484

The dismissals during the year were 110 from Mount Vernon, 110 from Scotstoun, and 225 from Mount Blow. The condition on dismissal is summarised in the following statement:—

	Mount Vernon.	Scots- toun.	Mount Blow.	Total.
Much improved, ... ..	96	96	93	285
Not improved, ... ..	—	—	1	1
Parents leaving City, ...	—	4	1	5
Transferred suffering from infectious disease, ...	5	—	12	17
Taken home by parents (fretting, &c.), ... ..	2	8	30	40
Died, ... ..	—	—	—	—
For admission to other In- stitutions, ... ..	—	1	2	3
Sent home, ... ..	1	1	—	2
Contacts with cases of Infec- tious Disease sent home,	6	—	86	92
	110	110	225	445

Of the total, 445, discharged from Country Homes during the year, 285 were much improved, while 17 were transferred suffering from infectious disease, and 92 others dismissed as contacts with these. During the preceding year the respective figures were 289 much improved, 32 transferred with infectious disease, and 48 sent home as contacts.

*Garscube Cottage Hospital.*—The arrangement whereby this Home was taken over for the purpose of giving debilitated mothers with young children an opportunity of recuperating their health by a fortnight's rest has been continued. During the year, 184 mothers with 189 infants were admitted, while dismissals numbered 182 mothers and 187 infants. Of the total, 128 completed fourteen days' residence, while nine others were kept in for a few days longer; the remainder (47) left before the end of the fortnight, mostly for domestic reasons.

## MIDWIVES AND MATERNITY HOMES ACT, 1927.

During the year five applications for registration were granted. In one of these cases the keeper of the home had removed to new premises, while another was due to a change in management.

Seven certificates of registration of premises were withdrawn. In one of these cases there had been a change in management, in another the home had been transferred to new premises, while one keeper had stopped taking maternity cases, the four remaining cancellations being in respect of homes whose keepers had given up the work.

The number of Maternity Homes on the Register at 31st December, 1930, is therefore as follows :—

	Registered.	Exempted.
Maternity Hospitals, ... ..	2	—
General Infirmarys and Hospitals, ...	—	5
Nursing and Maternity Homes, ...	44	3
	<u>46</u>	<u>8</u>

## MIDWIVES (SCOTLAND) ACT, 1915.

During 1930 there was again a decrease in the number of midwives who notify their intention to practise (263 as against 275 in 1929) ; 172 of these are entitled to registration “by examination,” and 91 as having been in practice in December, 1914—a decrease of 5 in the former class, and 7 in the latter. Other changes are as follows :— one died ; one went abroad ; two left Glasgow ; five resigned ; three (who were reported to the Board at the end of 1929) were struck off the roll ; and one reported to the Board is on three months’ probation. Eighteen midwives notified their intention to practise for the first time. Only one of these was a *bona fide* midwife ; she came from a country area and only attended a single case in Glasgow. Each year a number cease to notify intention to practise, which accounts for the difference in numbers.

Eight cases did not have skilled attention at birth. Four were foundlings and the others were emergency cases.

The registered lying-in houses kept by midwives have been on the whole satisfactory. With 124 normal confinements and 129 others, six cases were removed to a fever hospital and one transferred home for nursing. No serious complication necessitating removal to the Maternity Hospital occurred. Most of the 129 cases other than normal were ordinary forceps deliveries, with or without laceration, breech births, &c.

The following table summarises the numbers for the year, with relative figures for the two preceding years :—

	1928	1929	1930
Midwives in Practice during year, ... ..	289	275	263

THE QUALIFICATIONS FOR CERTIFICATION UNDER  
ACT, HELD BY THE FOREGOING WERE—

In Practice, December, 1914, ... ..	108	98	91
C.M.B. (Scotland) Examination, ... ..	137	136	133
Other recognised qualifications, ... ..	44	41	39

In the following table some indication is afforded of the number of births attended during the year by individual midwives. It would seem that of the 9,687 births attended by midwives, 7,420 occurred in the practice of midwives with 50 confinements or more in the year:—

#### BIRTHS NOTIFIED BY MIDWIVES.

		1928	1929		1930	
			Births.	Midwives.	Births.	Midwives.
Under 50 Notifications, ...		2,507	2,399	153	2,267	139
50-100	...	3,357	3,423	49	2,992	41
100-200	...	3,678	3,252	24	3,856	28
200-300	...	727	666	3	672	3
		10,269	9,740	229	9,687	211

#### STILL-BIRTHS NOTIFIED BY MIDWIVES.

Notifications.			Midwives.			Still-Births notified.		
			1928	1929	1930	1928	1929	1930
1-5,	...	...	108	117	99	222	226	217
6-10,	...	...	5	6	8	37	41	58
10+	...	...	—	1	—	—	12	—
			113	124	107	259	279	275
Percentage of Births attended			...	...	...	2.6	2.9	2.8

1928	...	...	...	In 80 cases, Doctors assisted.
1929	...	...	...	In 93 " " "
1930	...	...	...	In 93 " " "

The figures in the two following summaries contain records of ophthalmia occurring in the practice of midwives, so that the numbers are not the same as the actual cases referred to in other sections of this Report:—

#### CASES OF OPHTHALMIA NEONATORUM OCCURRING IN PRACTICE OF MIDWIVES.

Notifications.			Midwives.			Cases notified.		
			1928	1929	1930	1928	1929	1930
1-5,	...	...	80	75	77	166	173	179
6-10,	...	...	18	17	16	129	127	114
11-15,	...	...	6	7	5	77	87	66
16-20,	...	...	1	—	2	16	—	33
21-25,	...	...	2	1	1	47	22	21
Over 25,	...	...	—	—	—	—	—	—
			107	100	101	435	409	413
Percentage of Births attended,			...	...	...	3.9	4.2	4.2

## CASES OF PUERPERAL FEVER OCCURRING IN PRACTICE OF MIDWIVES.

				Midwives.			Cases.		
				1928	1929	1930	1928	1929	1930
1 Case, ...	...	...	...	53	45	47	53	45	47
2 Cases, ...	...	...	...	17	23	14	34	46	28
3 „ ...	...	...	...	5	5	17	15	15	51
4 „ ...	...	...	...	2	2	4	8	8	16
5 „ ...	...	...	...	2	2	1	10	10	5
6 „ ...	...	...	...	—	—	1	—	—	6
8 „ ...	...	...	...	—	—	1	—	—	8
				79	77	85	120	124	161

## NUMBER OF REQUESTS FOR ASSISTANCE TO MEDICAL PRACTITIONERS IN CASES OF EMERGENCY UNDER RULE.

				Midwives.			Requests made.		
Notifications.				1928	1929	1930	1928	1929	1930
Under 10, ...	...	...	...	97	100	70	400	404	281
„ 20, ...	...	...	...	51	42	51	666	571	669
„ 30, ...	...	...	...	19	27	16	424	659	371
„ 40, ...	...	...	...	13	13	15	432	455	518
„ 50, ...	...	...	...	5	3	11	235	131	493
Over 50, ...	...	...	...	6	4	7	339	229	401
				191	189	170	2,496	2,449	2,733

During the year there were 2,733 occasions on which medical help was called by midwives, which represents 28 per cent. of the total births occurring in the practice of midwives, and compares with 25 per cent. in 1929 and 24 per cent. in 1928. Details of the nature of emergency are not given this year, but the following indicates the period during which medical assistance was called:—

## NATURE OF EMERGENCY.

				1928	1929	1930
In all cases in which a woman during pregnancy, labour, or lying-in appears to be dying or is dead, ...	...	...	...	1	2	3
PREGNANCY.—In cases of a pregnant woman, where there is any abnormality or complication, ...	...	...	...	106	141	126
LABOUR.—In the case of a woman in labour at or near term, when there is any abnormality or complication, ...	...	...	...	1,682	1,598	1,857
LYING-IN.—In the case of a lying-in woman, when there is any abnormality or complication, ...	...	...	...	288	269	326
THE CHILD.—In the child, when there is any abnormality or complication, ...	...	...	...	404	421	411
Cannot be classified, ...	...	...	...	15	18	10
Total, ...	...	...	...	2,496	2,449	2,733

## DEATHS (NOTIFIED BY MIDWIVES) BEFORE A

DOCTOR WAS IN ATTENDANCE,	...	...	...	— mothers, 12 infants;
LAYING OUT THE DEAD,	...	...	...	1 adult, 4 infants;
ARTIFICIAL FEEDING,	...	...	...	40 Notifications.

## INTIMATION OF EXPOSURE TO INFECTION.

DISEASES.	1928	1929	1930
Puerperal Fever, ...	90	108	122
Measles, ...	6	10	9
Scarlet Fever, ...	5	2	9
Diphtheria, ...	3	2	3
Pneumonia, ...	8	6	9
Erysipelas, ...	1	3	3
Enteric, ...	—	—	—
Chickenpox, ...	2	3	—
Whooping Cough, ...	—	—	2
Pyrexia, ...	—	—	6
Others, ...	4	6	2
	<u>120</u>	<u>140</u>	<u>165</u>

*Fees to Doctors in Emergency Cases.*—In the following table the total amount of accounts for the year ending November is shown, that being the period at which doctors' accounts are made up:—

Year ended November, 1922, ...	£2,040	7	0
Do. do., 1923, ...	1,829	17	0
Do. do., 1924, ...	1,229	0	0
Do. do., 1925, ...	1,416	18	0
Do. do., 1926, ...	1,610	4	6
Do. do., 1927, ...	1,456	11	6
Do. do., 1928, ...	1,632	5	0
Do. do., 1929, ...	1,711	0	6
Do. do., 1930, ...	2,043	11	0

The practice of issuing accounts with the object of recovering some part of the fee, which was begun as from June, 1922, has been continued, and during the past year £382 8s. has been so recovered, while £23 16s. 6d. was withdrawn from medical practitioners' accounts, and accounts for £11 12s. were deleted.

## OPHTHALMIA NEONATORUM.

During the year 822 cases were notified as suffering from ophthalmia neonatorum, a considerable increase as compared with 639 in 1929, and 692 in 1928. This increase may be regarded as due to more complete notification of inflammation of the eyes of newly born children.



There was reason to believe that all such cases were not coming to light, and appropriate action was taken. The increase is almost entirely due to augmented notifications by institutions and nurses attending midwifery cases. For instance, although the number of cases notified by doctors (42) is lower than in 1929, those intimated by institutions and institutional nurses have increased to 109 and 251, compared with the respective figures of 73 and 111 during 1929.

Because of this, the incidence rate of ophthalmia has risen to 35.2 in 1930, compared with 28.0 in 1929. Particulars of these years are given in the following table, according to attendance at birth.

### OPHTHALMIA NEONATORUM CASES

AND CASE-RATES PER 1,000 BIRTHS.

Notified by	Year	Cases.			Rates.*		
		1928	1929	1930	1928	1929	1930
Doctors, ...	...	40	43	42	6.0	6.9	6.8
Institutions, ...	...	73	73	109	20.6	21.0	27.5
Inst. Nurses, ...	...	145	111	251	40.8	30.5	64.9
Midwives, &c. ...	...	434	412	420	43.7	43.4	44.7
Number Registered, ...	...	692	639	822	29.2	28.0	35.2

\* Calculated on Live Births notified. "Doctors found in attendance" are included in "Doctor in attendance," and deducted from "Midwives," &c.

Of the total cases, 58 of the more severe type were removed to hospital, and the others were treated at home or at Child Welfare Centres by the nurses, who made 6,055 visits in this respect.

The period at which symptoms appear is given in the following summary, which shows considerable uniformity with regard to the interval after birth at which ophthalmia develops:—

Cases occurring at Age—		1928	1929	1930
— 12 hours,...	...	56	72	64
— 4 days, ...	...	245	206	318
— 8 ,, ...	...	250	242	307
+ 8 ,, ...	...	141	119	133
		692	639	822

*Association with Syphilis.*—Swabs of the discharge from eyes are obtained from as many cases as possible for examination for gonococcus, and the results are shown in the following table, together with information as to association with clinical syphilis, verified by bacteriological tests or otherwise. Of the swabs examined for gonococcus only, about 9.1 per cent. proved positive, against 7.2 per cent. during the preceding year.

Among the gonococcal cases one was associated with syphilis.

	GONOCOCCAL.			NON-GONOCOCCAL.			UNCLASSIFIED.			TOTAL.		
	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.	Total Cases.	Syphilis present.	Per cent. with Syphilis.
1928,	50	2	4.0	393	2	0.5	249	—	—	692	4	0.6
1929,	30	4	13.3	386	—	0.0	223	—	—	639	4	0.6
1930,	56	1	1.8	577	1	0.2	189	—	—	822	2	0.2

The number found to be of gonococcal origin was 56, compared with 30 for the preceding year ; but this latter number was low compared with the records of preceding years. The number of cases of gonococcal ophthalmia represents a rate of 2.4 per thousand births during 1930, compared with 1.3 in 1929. In 1919 the rate was 10.34.

*Gonococcal Cases.*—For the first time since 1926 there is a record of blindness as a result of ophthalmia neonatorum. In one instance the sight of one eye was lost, but in no other of the 55 cases in this group were any defects recorded, although there was one death.

*Non-Gonococcal Cases.*—In this group of 577 cases there were nine deaths, while three others removed, so that the final record was not available. In one child blindness resulted in one eye, while in the other eye a corneal scar remained with fair vision.

Result.	1928		1929		1930	
	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.
GONOCOCCAL—						
No Corneal Scar, ...	40	2	24	2	53	1
Corneal Scar remaining						
In one eye—						
Sight not impaired,	1	—	—	—	—	—
" impaired, ...	—	—	2	1	—	—
Blind, ...	—	—	—	—	1	—
In both eyes—						
Sight not impaired,	—	—	—	—	—	—
" impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
Removed, ...	—	—	—	—	—	—
Died, ...	7	—	—	1	1	—
	48	2	26	4	55	1

Result.	1928		1929		1930	
	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.	No Syphilis.	Syphilis Present.
NON-GONOCOCCAL—						
No Corneal Scar, ...	386	1	383	—	564	—
Corneal Scar remaining						
In one eye—						
Sight not impaired,	—	—	—	—	—	—
„ impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
One eye fair and one eye blind, ...	—	—	—	—	1	—
In both eyes—						
Sight not impaired,	—	—	—	—	—	—
„ impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
Removed, ...	2	—	1	—	3	—
Died, ...	3	1	2	—	8	1
	391	2	386	—	576	1
UNCLASSIFIED—						
No Corneal Scar, ...	248	—	223	—	189	—
Died, ...	1	—	—	—	—	—
Removed, ...	—	—	—	—	—	—
	249	—	223	—	189	—
Total, ...	688	4	635	4	820	2

### PUERPERAL FEVER AND PUERPERAL PYREXIA.

In view of the enforcement in Scotland of the Puerperal Fever and Pyrexia Regulations, 1929, and the administrative arrangements made in pursuance of these regulations, an opportunity is now taken to review this aspect of maternal mortality and morbidity in Glasgow.

*Puerperal Fever.*—The relative figures showing cases, deaths, &c., for the past ten years are tabulated here for comparison :—

	Cases.	Deaths.	Case Mortality per cent.	Cases per 1,000 Births.	Deaths per 1,000 Births.
1921, ...	321	72	22.4	10.8	2.4
1922, ...	294	94	32.0	10.4	3.3
1923, ...	278	72	25.9	10.4	2.7
1924, ...	239	61	25.5	9.5	2.4
1925, ...	300	68	22.7	11.8	2.3
1926 (Old City),	307	69	22.5	12.6	2.8
1927, ...	277	61	22.0	11.7	2.6
1928, ...	413	89	21.5	17.5	3.8
1929, ...	516	86	16.7	22.6	3.8
1930, ...	598	86	14.4	25.6	3.7

It will be observed that the reported cases of puerperal fever have been quickly mounting during the past three years to a total of 598 for the year 1930, a figure which represents cases actually verified as coming within the definition of puerperal fever. There has also been a corresponding increase to 25·6 in the figure for cases per thousand births occurring in the City. As regards the reasons for these increases, there is no doubt that they are largely due to increased accuracy in diagnosis, better recognition of the actual cause of fever following child-birth, and less hesitancy in reporting instances of this infection. There is no evidence that the figures represent an actual increase in the incidence of puerperal fever.

Several factors have contributed to this situation, among which may be mentioned (1) the increased publicity accorded to this infection as a cause of sickness and death during the past two or three years in Government and other reports and in the medical and lay press; (2) the coming into force in 1929 of the Puerperal Fever and Pyrexia Regulations, which made the presence of even a mild degree of pyrexia or fever in women after child-birth a notifiable condition by itself, whatever its cause might be; (3) increased facilities for hospital and other treatment provided by the Health Committee; (4) alteration in the form of death certificate which came into force in June, 1929; and (5) the influence of the current enquiry proceeding as to the causes of maternal mortality under the ægis of the Department of Health for Scotland. All these factors have contributed to throw this question of puerperal infection into strong relief.

The increase in the number of milder cases now being reported has given rise to a marked drop in the case mortality, but, on the other hand, the death-rate per thousand births, i.e., 3·7, is only fractionally less than it was in 1928 and 1929. It remains to be seen whether this movement in the direction of recognition, notification and treatment of milder cases, will, in fact, sensibly diminish the incidence of fatal infections. So far there is little evidence of any such sequence.

A Report on Puerperal Infection in Maternity Hospitals by the Medical Officer of Health was published by the Department of Health during the year.

It should be remarked that notification is being, on the whole, well carried out by all concerned. Many instances are reported of febrile states just bordering on the standard laid down. This is especially the case in maternity hospitals and homes, a feature which encourages watchfulness for the first indications of infection.

The results of the new administrative measures are reviewed as follows by Dr. John Walker, who has given careful consideration to the question of classification of the pyrexias for comparison with future experience:—

*Distribution of Puerperal Fever.*—The monthly incidence of the disease remains remarkably constant around 50, except for a slight increase in May and October. Graphically, this was shown to correspond

to a certain extent with a relative increase in the scarlet fever incidence in the city generally, but did not appear to be related to the erysipelas case rate. Apart from institutional outbreaks, the disease should be regarded as an endemic one, depending mostly on a chance infection of a raw surface, viz., the genital tract.

*Distribution in City Wards.*—The high incidence of cases in Hutchesontown, viz., 27, 25 in Ruchill, and 21 in Gorbals, is contrasted with no cases in Pollokshields, one in Kelvinside and two in each of the wards Camphill and Pollokshaws. A truer basis, however, is apparent when the case rate per thousand births is considered, Park Ward showing the highest rate of 37·8 with a sepsis mortality rate of 10·8 per thousand births, the next being Anderston with a case rate of 28·9 and a death-rate of 4·8, the incidence rate being none in Pollokshields and almost equal in Provan, Kelvinside, Pollokshaws, and Mile-end, viz., five per thousand births. The death-rate, however, was highest in Langside Ward, with a rate of 12·2 per thousand births, the next being Park, 10·8, which just exceeded the institutional rate of 10·3. Springburn was 7·8, then Partick East 7·5, equalled Townhead, while Sandyford and North Kelvin were still lower, giving 7·1. No deaths were recorded in Whitevale, Blythswood, Exchange, Maryhill, Gorbals, Pollokshields, or Camphill (it is noteworthy here that deaths occurring in institutions are referred to their home addresses), while the lowest death-rate occurred in Calton Ward, with 1·09 per thousand births, compared with 1·5 in the neighbouring ward of Mile-End, and 1·7 in Maryhill, as compared with 1·8 in Hutchesontown. It will be seen that, so far as case incidence and death-rates are concerned, there is no apparent selection or social distribution of the disease.

*Puerperal Pyrexia Regulations.*—The cardinal principle of these regulations is to secure a more complete notification of the complications of the puerperium, so as to reduce the maternal mortality and morbidity. There have now elapsed fifteen months in which to judge the general effect of notification of febrile states and to assess the effect of the higher standard as regards cases brought to the notice of the Department. The total notifications of fever and pyrexia for the year together numbered 863, 30 of which were altered to conditions other than pyrexia. Of the 383 notifications of pyrexia, 235 were verified as pyrexia; thus there occurred 598 cases classifiable as puerperal fever. There were 413 cases of fever in 1928 and 565 in 1929 (of which 49 were verified as due to puerperal pyrexia). The general effect of this administrative step has been to increase the number of notifications.



# PUERPERAL FEVER AND PYREXIA FOR YEAR 1930. CASE RATES AND DEATH RATES ACCORDING TO ATTENDANCE AT BIRTH.

	Total.		Deaths.		Total Cases		Cases per 1,000 Births.		Deaths.		Deaths per 1,000 Births.		Case Mortality per cent.	
	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.	Fever.	Pyrexia.
<i>Doctors—</i>														
Doctors only, ...	105	38	16	5										
Doctors and Midwives, ...	29	5	4	2										
Doctors and Queen's Nurses, ...	21		5	—										
	155	48	25	7	155	48	24.2	7.5	25	7	3.9	1.1	16.1	14.6
<i>Midwives—</i>														
Midwives only, ...	123	34	16	6										
Midwives calling Doctors, ...	38	8	7	—										
	161	42	23	6										
Maternity Hospital, Indoor, ...	...	...	...	...	161	42	16.6	4.3	23	6	2.4	.6	14.3	14.3
" " Outdoor, ...	...	...	...	...	130	63	45.3	21.9	24	7	8.4	2.4	18.5	11.1
Local Authority Hospitals, ...	...	...	...	...	49	24	12.3	6.0	6	1	1.5	.3	12.2	4.2
Govan Maternity Cottage Hospital, Indoor, ...	...	...	...	...	44	45	29.9	30.6	8	7	5.4	4.8	18.2	15.6
" " " Outdoor, ...	...	...	...	...	1	6	3.1	18.6	1	—	—	—	—	—
Women's Hospital, ...	...	...	...	...	1	—	—	—	—	—	—	—	—	—
Confined outside City, per Glasgow Institutions, ...	...	...	...	...	10	—	—	22.2	—	—	—	—	—	—
No one (Abortion), ...	...	...	...	...	42	3	—	—	11	1	—	—	—	—
Others (Infirmeries, Fever Hospitals, &c). ...	...	...	...	...	5	3	—	—	3	3	—	—	—	—
	598	235	24.5	9.6	102	32	4.2	1.3	17.1	13.6				

In the above table it will be noted that a differentiation has been made between pyrexias and fevers. The fever case rates for midwives is 16.6 per 1,000 births, as against 24.2 for doctors and 45 for indoor, as compared with 12.3 for the outdoor Maternity Hospital, the Local Authority General Hospitals having a rate of 29.9 per 1,000 births. It is noteworthy that, in spite of the liability to autogenous infection, the Women's Hospital had no cases of fever, but gave a pyrexia incidence of 22.2 per 1,000 births. The case mortality of fevers for midwives was 14.3 per cent., as compared with 16.1 per cent. for doctors and over 18 per cent. in the larger hospitals of the City, whereas the pyrexia case mortality was almost equal for all.

The number of patients notified as pyrexia was 383, or 46 per cent. of the total. There is a tendency for the practitioner to adopt the alternative term, viz., pyrexia, as a designation in complying with his statutory duty as regards notification, rather than to employ the old term puerperal fever. This is shown by the fact that 148, or 40 per cent., of cases notified as pyrexia subsequently turned out to be definite cases of puerperal fever; this figure was 56 per cent. in the last quarter of 1929. The term puerperal pyrexia, therefore, is not only a wide embracing symptom of many diseases causing a febrile state, but, in practice, connotes puerperal sepsis in approximately half the cases so reported.

The causes of pyrexia have been classified on the basis of diseases of systems as far as possible, although the finer degrees of differentiation of the clinical conditions raise obvious difficulties. To a certain extent mild cases of sepsis may have been included in this group, as it is, of course, impossible to include these entirely.

*Classification of Pyrexias as Diseases of Systems (235 patients)—*

*Respiratory.*—Influenza 6, bronchitis 12, pneumonia 28, pleurisy 3, bronchiectasis 1, chest affections 8, phthisis 8—Total 66.

NOTE.—The high incidence of puerperal pneumonias as a cause of pyrexia, and a dangerous complication of childbirth, is noteworthy.

*Circulatory.*—Endocarditis 4, thrombosis 4, embolism 2, phlebitis 4,—Total 14.

NOTE.—Phlebitis of the leg is usually due to a mild pelvic sepsis. These cases should be scrutinised from that viewpoint.

*Urinary.*—Nephritis 1, bacilluria 3, pyelitis 15, cystitis 1, albuminuria 8, retention 1—Total 29.

NOTE.—The high incidence of pyelitis is to be noted here. There is a tendency to regard minor degrees of sepsis as pyelitis without carefully excluding the possibility of a contaminated specimen of urine.

*Digestive.*—Constipation 3, colitis 1—Total 4.

*Bacterial Infections.*—Gonorrhœa 2, syphilis 1, scarlet fever 5, malaria 1, erysipelas 3, mastoid 1, non-puerperal septicæmia 1—Total 14.

NOTE.—The association of scarlet fever and erysipelas with puerperal sepsis is well known. No definite pelvic infection, however, could be found to account for the above. A definite source of potential infection, however, was present in these cases.

*Joints and Muscles.*—Rheumatism 1, Pott's disease 1—Total 2.

*Metabolism.*—Eclampsia 1.

*Lactation*.—Milk suppression 11, mastitis 24—Total 35.

NOTE.—On account of the similarity of organisms found in cultures from breast abscesses and intra-uterine swabs, the possibility of a metastatic infection from the pelvic organs should be borne in mind as a possible source.

*Accidents of Pregnancy*.—Ante-partum hæmorrhage 2, post-partum hæmorrhage 6, perineal tears 16, cervical tears 2, post-partum shock 1—Total 27.

NOTE.—Lacerations giving rise to mild febrile disturbances are mostly due to mild septic infections.

*Psychological*.—Insanity 1, hysteria 1—Total 2.

*Pyrexias of Undefined Origin* ("Puerperal Pyrexias")—41.

*Duration of Febrile State in Pyrexias of Undefined Origin, where ascertained*.—31.

Days.	1	2	3	4	5	6	7	8
Cases, ...	12	10	4	1	1	1	1	1

The undefined pyrexias (where the causal disease could not be ascertained readily) were 41, and represent only 17 per cent. of the total. These would, in the majority of cases, undoubtedly have revealed, on complete clinical investigation, a certain degree of sepsis.

In the administration of these regulations, with particular reference to maternity hospitals and homes, it was suggested that all cases presenting a temperature of over 100·4 degrees F. for more than two days, where no other definite diagnosis had been established, should be regarded as cases of puerperal fever. This was found in practice to be justified by experience.

*Glasgow Royal Maternity and Women's Hospital*.—An arrangement was made with the Maternity Hospital on 21st October to transfer cases of sepsis to the new ward at Robroyston Hospital. This is a progressive step in the prevention of contact spread in a large Maternity Hospital. It has the disadvantage, however, that the clinician is unable to follow up his cases.

*Increased Hospital Provision*.—In view of the increase in notifications and demand for bed accommodation, a pavilion at Robroyston Hospital containing 50 beds (no longer required for the treatment of tuberculosis) was adapted and opened for puerperal patients on 8th October, 1930. Here, due regard can be paid to the isolation of virulent and highly infectious cases by the provision of cubical observation beds; doubtful cases, on admission, can be kept several days before diagnosis and classification for transfer into the infectious or fever ward, or the non-infectious, convalescent, or pyrexia divisions.

Of the 235 verified cases of puerperal pyrexia, the number treated in local authority isolation hospitals was 41, or 17 per cent. of total, in other hospitals and institutions 125, or 53 per cent. of total, leaving 69 or 30 per cent. to be treated at home.

*Consultant Service.*—The panel of consultants, numbering 11, submitted 33 reports during the year. Of these patients, 18 were removed to hospital and 5 deaths were reported. This service is of value to the medical practitioner and to the Department. It provides an expert opinion as to diagnosis, aids in securing appropriate treatment of the patient, and assists in the prevention of infection. It would be useful, indeed, if the consultant service were more freely used, and a wise judgment brought to bear on doubtful cases such as those where febrile conditions were actually found to be due to interior infection.

*Bacteriological Examinations.*—Material was submitted to the City Bacteriologist in seven cases by outside practitioners for bacteriological examination of swabs. The main number, totalling 181, however, came from the isolation hospitals treating the fevers.

*Nursing Services.*—Arrangements were made with the Glasgow District Nursing Association to undertake the home nursing of pyrexia cases where requested by medical practitioners. Only one such request was received during the year. In view of the special treatment facilities for puerperal fever in Glasgow, cases of fever were not considered suitable for home treatment, generally speaking. The nurses detailed for pyrexia cases were not allowed to attend other midwifery cases.

*Altered Diagnoses.*—These numbered 30 during the year, showing a low rate of 3·4 per cent., of which 25 were abortions, complete, incomplete, threatened, and inevitable. These still continue to be sent in to infectious disease hospitals, where danger of infection is minimised by segregation or preventive inoculation. The rest were non-pregnant menorrhagias, with the exception of one pyelitis.

*Summary.*—There is an increased incidence of cases being brought to the notice of the Department. This is associated with a lower case mortality, although the death-rate is only slightly decreased. Hospital provision for treatment was taken advantage of in 93 per cent. of the fevers and 70 per cent. of pyrexias. Forty per cent. of the pyrexia notifications subsequently proved to be definite cases of sepsis. Many intercurrent illnesses unassociated with the puerperium have come to be recorded.

## THE EPIDEMIOLOGY, BACTERIOLOGY, AND TREATMENT OF PUERPERAL SEPSIS.

BY MARGARET THOMAS, M.D.

Puerperal infection is generally acknowledged to be the most important factor in the determination of maternal death-rate; and the increasing medical and public interest shown in this disease warrants a special analysis of the recent investigations which have been made with regard to it, especially in so far as it affects the Glasgow area.



This summary deals with 800 patients treated in the puerperal fever wards of Belvidere Hospital. Of that number, 600 were personally supervised by the writer during the period May, 1929-January, 1931; while the remainder were in hospital during the previous year, and the details concerning them have been abstracted from the clinical records of the medical officers then responsible for the work.

The cases are reviewed from three main aspects. There are, in the first place, the epidemiological findings, which may be of some value in a large series of this nature. Secondly, there is the question of bacteriology; and this is of interest not only from the etiological standpoint, but becomes of paramount importance when attempts are made to rationalise the treatment of the disease. Finally, there remains to be discussed the curative aspect, and a survey made of the measures directed not only against the mortality but also against the equally important morbidity from this disease.

*The Cases.*—At the outset, a brief analysis of the type of case may be advisable.

TABLE I.  
SHOWING 800 CASES IN RELATION TO DURATION  
OF PREGNANCY.

Duration of Pregnancy.	No. of Cases.	Percentage of Total.
Full-time birth, ...	573	71·6
Premature birth, ...	34	4·3
Miscarriage, ...	53	6·6
Abortion ...	140	17·5
	607	75·9
	193	24·1

It is thus evident that in almost one-quarter of the cases infection followed abortion or miscarriage, and that more than a sixth were of the former category.

Of the total series, 122 proved fatal, and a similar analysis reveals the proportions found in Table II.

TABLE II.  
SHOWING 122 FATAL CASES IN RELATION TO DURATION  
OF PREGNANCY.

Duration of Pregnancy.	No. of Cases.	Percentage of Total.
Full-time birth, ...	94	77·0
Premature birth, ...	4	3·4
Miscarriage, ...	14	11·4
Abortion, ...	10	8·2
	98	80·4
	24	19·6

Thus practically one-fifth of the fatalities resulted from miscarriage or abortion. A comparison of these tables also shows that the fatality rate from septic miscarriage was almost four times as great as that from sepsis in the earlier months; and this may be related to the fact that secret abortion is usually practised at the later stage.

There has been a tendency to overlook the importance of both of these factors, and the interim report of the Ministry of Health's Departmental Committee on Maternal Mortality and Morbidity<sup>1</sup> dismissed the question of post-abortum sepsis with great brevity. The significance of abortion as a cause of maternal death is, however,



gradually being appreciated; and recently a report<sup>2</sup> published by the Health Section of the League of Nations stated categorically that the maternal death-rate is even more affected by abortion than by delivery at term. This report also affirmed that in the majority of countries, during the past thirty years, while the maternal mortality following puerperal fever had been reduced by half, the post-abortum deaths remained at a high level. The problem is closely linked to that of illegitimacy, and is thus, to a large extent, a social one; but if the published reports of many observers are to be relied upon, then the total numbers of abortions and miscarriages occurring annually in this country must reach enormous proportions; and it may well be that research along these lines would throw considerable light on the maintenance of the puerperal sepsis mortality rate at its present high level in many localities.

*Grouping of Cases.*—The epidemiological and clinical features, and to a greater extent the problems of their treatment, differ markedly in respect of full time and post-abortum cases, and they have therefore been segregated throughout the investigation.

The cases also varied in the extent and severity of their infection, and for the purposes of this analysis—more especially with regard to the bacteriological and curative aspects—it was found advisable to recognise four definite groups. The typical features of these were as follows:—

*Group I.*—Infection limited to perinæum, vagina, and cervix, and usually associated with lacerations of these parts. Frequently accompanied by slight, and occasionally by marked, subinvolution of the uterus.

*Group II.*—Infection established within the uterus, causing septic or putrid endometritis. In many cases associated with lacerations and sepsis of the lower parts of the genital tract, and with retained placental debris.

*Group III.*—Infection spreading to the adnexa, pelvic cellular tissue, and peritoneum, and accompanied by gross or only by minimal involvement of the uterus itself.

*Group IV.*—Infection invading the blood stream, as in septicæmia and pyæmia. This may be concurrent with slight or severe local sepsis, and with an active spreading lesion, but the blood infection is the dominant feature.

An analysis of the total cases, in accordance with the above grouping, will be found below.

TABLE III.  
SHOWING TYPES OF CASES IN RELATION TO GROUPING.

		Full-time Birth.	Premature Birth.	Mis- carriage.	Abortion.	Total.	Percentage of Total.
Group I.,	...	69	7	5	31	112	14.0
Group II.,	...	237	12	26	73	348	43.5
Group III.,	...	176	11	12	29	228	28.5
Group IV.,	...	91	4	10	7	112	14.0
Total,	...	573	34	53	140	800	—

The majority of cases thus belonged to the intermediate group, but it is to be noted that many puerperal infections of the first and mildest type do not come under hospital supervision. The relatively high proportion of cases admitted with established blood infection is also noteworthy.

A similar analysis of the fatal cases is shown in Table IV.

TABLE IV.

SHOWING TYPES OF FATAL CASES IN RELATION TO GROUPING.

		Full-time Birth.	Premature Birth.	Mis- carriage.	Abortion.	Total.	Percentage of Total.
Group I.,	...	—	—	—	—	—	—
Group II.,	... ..	2	—	3	1	6	4.9
Group III.,	... ..	18	2	3	2	25	20.4
Group IV.,	... ..	74	2	8	7	91	74.7
Total,	...	94	4	14	10	122	—

The importance of systemic infection in determining a fatal issue is thus evident, and the extreme fatality of post-abortionum septicaemia is also to be observed. In a fifth of the fatal infections death resulted from spreading pelvic inflammation, frequently associated with peritonitis, but occasionally of a less virulent type characterised by phlebitis and pyaemic manifestations. There was also, it is to be noted, a small proportion of fatal cases in whom the initial lesion was apparently of the localised intra-uterine type.

*Epidemiological Features.*—The factors considered under this heading were as undernoted :—

- I. Age distribution.
- II. Parity.
- III. Legitimacy.
- IV. Previous puerperal infection.
- V. Nature of attendance at confinement.
- VI. Type of birth.
- VII. Duration of labour.
- VIII. Abnormalities of the third stage of labour.
- IX. Foetal characters—
  - (a) Multiple birth.
  - (b) Sex.
  - (c) Still-birth.
- X. Rapidity of onset of illness after confinement.
- XI. Duration of illness prior to hospitalisation.

It was hoped that an analysis along such lines might throw light on the etiology of the disease, or indicate what influences were at work in determining severity or a fatal issue. Space does not permit, however, of other than a very brief reference to the majority of the above factors.

*Age Distribution.*—In a consideration of the ages of the patients under review, and also with regard to other factors—as will be noted later—a standard was required, and in default of available figures for the Glasgow area those furnished by the Aberdeen Report<sup>3a</sup> of 1929 were employed. From the analysis of 37,984 pregnancies found in that report, rates per thousand were calculated in respect of age distribution, parity, and legitimacy, and such rates were taken as standards for the factor under consideration. Ratios of the puerperal sepsis figures to these standards were then made, and in this way comparisons were simplified. Such a plan is open to objection on the grounds that figures for pregnancies occurring in Aberdeen may not be strictly comparable to those for Glasgow; but in respect of age and parity at any rate much variation is unlikely in such a large series of pregnancies as the Aberdeen Report covers. It is not implied, however, that rigid conclusions be drawn from these ratios.

An analysis of the total cases in the light of age distribution is given in Table V.

TABLE V.  
SHOWING COMPARATIVE DANGERS OF VARIOUS AGE GROUPS.

	Age—Five-yearly Periods.							45 and over.	Tot
	15-19	20-24	25-29	30-34	35-39	40-44			
All cases, ... ..	42	181	236	187	109	40	4	79	
Ratio to standard 1,000, ... ..	1.0	0.70	0.79	0.87	0.84	0.73	0.66	0.8	
Full-time and premature births, ... ..	38	148	183	137	75	24	1	60	
Fatal do. do. ... ..	5	19	24	22	18	9	1	9	
Fatality rate per cent., ... ..	13.1	12.8	13.1	16.0	24.0	37.5	—	16.	
Abortions and miscarriages, ... ..	4	33	53	50	34	16	3	19	
Fatal do. do. ... ..	—	7	5	2	8	—	2	2	
Fatality rate per cent., ... ..	—	21.2	9.4	4.0	23.5	—	66.6	12.	
All fatal cases, ... ..	5	26	29	24	26	9	3	12.	
Ratio to standard 1,000 ... ..	0.12	0.10	0.09	0.11	0.20	0.17	0.5	0.1	
Fatality rate per cent., ... ..	11.9	14.3	12.3	12.8	23.8	22.5	75.0	15.	
Estimated standard 1,000 pregnancies,	42	256	296	213	129	55	6	99	

NOTE.—One patient (aged 13 years) has been excluded from the above survey, and similarly of women over 14 years have been shown in the analysis of standard pregnancies.

Several observations may be made with regard to these figures :—

(1) Consideration of the cases as a whole, and of the ratios which they showed towards the standard 1,000 pregnancies, reveals the fact that the liability to infection appeared to be almost equal at all ages.

(2) In the series of full time and premature births the liability to fatal infection steadily increased after the age of 30.

(3) With regard to the abortions and miscarriages, the results were less defined, and were to a large extent nullified by the small numbers of patients in the various age groups.

(4) An analysis of the total fatalities, and of their ratios to the standard pregnancies, showed that after the age of 34 there was a rapid increase in liability to fatal infection. In the final group—patients of 45 years and over—there were four cases, and in three instances the disease terminated by death.

The conclusions which are suggested, therefore, are that although age plays little part in determining infection, in patients who have passed beyond the active child-bearing period, the disease is specially liable to assume fatal characters.

*Parity.*—An analysis of the total cases in respect of parity is given in Table VI., a standard of comparison being again obtained by reference to the Aberdeen figures for all types of pregnancies.

TABLE VI.  
SHOWING COMPARATIVE DANGERS OF FIRST AND SUBSEQUENT PREGNANCIES.

	Number of Pregnancy.											Total.
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th & over.	
cases, ...	247	129	90	77	59	42	48	33	30	14	31	800
ratio to standard 1,000												
pregnancies, ...	1.0	0.57	0.50	0.72	0.78	0.71	1.1	1.5	1.8	0.93	1.1	0.8
full-time and premature												
births, ...	230	105	67	50	40	25	31	20	17	9	13	607
fatal do. do.	29	18	9	6	8	3	6	4	3	4	8	98
fatality rate per cent.	12.6	17.1	13.4	12.0	20.0	12.0	19.3	20.0	17.6	44.4	61.5	16.1
abortions and mis-												
carriages, ...	17	24	23	27	19	17	17	13	13	5	18	193
fatal do. do.	2	3	2	4	3	1	2	2	1	—	4	24
fatality rate per cent.	11.8	12.5	8.7	14.7	15.8	5.9	11.8	15.4	7.7	—	22.2	12.4
fatal cases, ...	31	21	11	10	11	4	8	6	4	4	12	122
ratio to standard 1,000												
pregnancies, ...	0.13	0.09	0.06	0.09	0.14	0.07	0.18	0.27	0.24	0.27	0.44	0.12
fatality rate per cent.	12.5	16.3	12.1	12.9	18.7	9.5	16.7	18.2	13.3	28.6	38.7	15.2
estimated standard												
1,000 pregnancies,	231	225	178	106	76	59	44	22	17	15	27	1,000

It will be noted that—

(1) Primiparæ provided a definite majority of the infections.

(2) From a comparison of the ratios to the standard thousand pregnancies, it appeared that the first confinement was twice as liable to sepsis as either the second or the third, and that not until the seventh confinement was an equal liability obtained. The seventh and succeeding pregnancies—with the exception of the tenth, where the numbers were very small—showed a definitely increasing tendency to be followed by sepsis.

(3) Separate consideration of the full-time and premature group revealed a lower fatality rate for the first confinement than for either the second or third, and a very markedly increased rate from the eighth pregnancy onwards. The smaller numbers of cases occurring in these latter groups detract, however, from their value.

(4) In the group of abortions and miscarriages, the majority of infections followed on the fourth pregnancy, and the fatalities provided on the whole similar results. The fatality rate for the cases occurring at fourth and fifth pregnancy was also greater than that for the earlier or later confinements. It has been affirmed that abortion



occurs most frequently at the second pregnancy; but the above figures, although small, appear to indicate that post-abortion sepsis and fatality are more liable to follow later pregnancies. Lowered general resistance may play some part in this.

(5) With regard to the fatal cases as a whole, the majority were primiparæ. Comparison of the ratios to the standard cases reveals, however, only a slightly increased liability in respect of the first confinement, but a very definite increase after the sixth pregnancy. The fatality rates for the cases occurring at each pregnancy gave similar results in respect of the later confinements; and an increased rate for the second as compared with the first, third, and fourth pregnancies was also noteworthy.

It may be inferred, therefore, that the first pregnancy is specially liable to be followed by sepsis, but that primiparæ are not more prone to develop a fatal illness than are multiparæ.

*Legitimacy.*—Figures have recently been adduced<sup>3b</sup> which appear to prove that the death-rate from sepsis—excluding septic abortion—is three times as high in unmarried as in married mothers; and that the difference for sepsis in abortion cases is even more pronounced. These results referred, however, to 69 fatal cases. An analysis of the present series, with reference to this factor, is given in Table VII., the Aberdeen figures being again taken as standard.

TABLE VII.

SHOWING SEPSIS AND FATALITY IN RELATION TO ILLEGITIMACY.

	Type of Pregnancy.		Total.
	Legitimate.	Illegitimate.	
All cases, ... ..	741	59	800
Ratio to standard 1,000, ... ..	0.81	0.68	0.80
Full-time and premature births, ... ..	569	38	607
Fatal do. do. ... ..	92	6	98
Fatality rate per cent., ... ..	16.1	15.8	16.1
Abortions and miscarriages, ... ..	172	21	193
Fatal do. do. ... ..	21	3	24
Fatality rate per cent., ... ..	12.2	14.2	12.4
All fatal cases, ... ..	113	9	122
Ratio to standard 1,000, ... ..	0.12	0.10	0.12
Fatality rate per cent., ... ..	15.2	15.2	15.2
Estimated standard 1,000 pregnancies,	913	87	1,000

From this analysis it appears that—

- (1) Illegitimacy did not increase the liability to sepsis.
- (2) In the full-time and premature births the fatality rate was not increased by this factor.
- (3) With regard to the abortion cases, illegitimacy was probably of some slight account in determining a fatal issue, but the figure was small and not to be compared with the 300 per cent. suggested by other workers. Experience goes far to prove that the practice



of secret abortion among unmarried mothers is mainly responsible for the increased fatality rate among them.

(4) A review of the total fatalities, and of their ratios to the standard thousand pregnancies, revealed no preponderance of illegitimate births; and when compared, the fatality rates for both types were found to be identical.

It is suggested, therefore, that illegitimacy plays, if anything, a very minor part in the causation of sepsis or of fatal infection.

*Previous Puerperal Infection.*—This was investigated with a view to assessing the probability of an autogenous infection. It is important to define the standard adopted. In a small percentage of the cases with such a history there had been a recent definite infection necessitating hospital treatment, the clinical records of which were still available. A few reported a previous attack while in other hospitals or at home. In the remainder, careful inquiry revealed circumstantial evidence of earlier sepsis, usually in association with abortion or miscarriage.

The figures obtained in this series indicated that—

(1) Autogenous infection from this source was most likely to occur in the cases of abortion or miscarriage.

(2) In the full-time and premature births the occurrence of a previous infection did not increase the liability to a fatal issue, whereas in the post-abortion cases there was a marked rise in the proportion of fatalities in respect of this factor.

(3) The fatality rate for the cases as a whole was slightly but definitely increased in the series of patients in whom a previous infection had been recorded.

It thus appears that an earlier attack may predispose to a severer type of illness, and to a fatal issue, but the figures available do not show whether the occurrence of infection is itself precipitated by this factor.

*Nature of Attendance at Confinement.*—In this connection the cases could be classified into four fairly large groups. The first included all confinements at which a doctor had officiated, either alone or—as in the majority of instances—with the assistance of a trained nurse or midwife. In the second group were all cases managed by midwives; and in a very small proportion of these medical assistance had been required at a late stage of labour, usually for the insertion of perineal sutures or the removal of an adherent placenta. A third series of patients had been confined under institutional care, either as in- or out-patients; while the fourth and final group consisted of those for whom no skilled assistance had been obtained.

Figures for the Glasgow area, giving the usual rate per thousand of medically attended, “midwife,” and institutional pregnancies, were available in this instance,<sup>4</sup> and ratios of the puerperal cases to these as standard were calculated as before. The analysis is given in Table VIII.

TABLE VIII.

SHOWING SEPSIS AND FATALITY IN RELATION TO NATURE OF ATTENDANCE AT CONFINEMENT.

Attendance by												
Doctor.			Midwife.			Institution.			No Skilled Atten- dance.	Tot.		
Alone.	With Midwife.	Total.	Alone.	With Doctor later.	Total.	In- Patient.	Out- Patient.	Total.				
All cases, ... ..	106	197	303	223	7	230	58	30	88	179	80	
Ratio to standard 1,000 preg- nancies, ... ..	—	—	1.1	—	—	0.56	0.35	0.2	0.27	—	—	
Full-time and premature births, ... ..	100	193	293	222	6	228	51	29	80	6	60	
Fatal do. do. ... ..	20	36	56	32	1	33	6	2	8	1	9	
Fatality rate per cent., ...	20.0	18.6	19.1	14.4	—	14.5	11.7	6.9	10.0	—	16.	
Abortions and miscarriages, ...	6	4	10	1	1	2	7	1	8	173	19	
Fatal do. do. ... ..	—	3	3	—	—	—	3	—	3	18	2	
Fatality rate per cent., ...	—	—	—	—	—	—	—	—	—	10.4	12.	
All fatal cases, ... ..	20	39	59	32	1	33	9	2	11	19	12	
Ratio to standard 1,000 preg- nancies, ... ..	—	—	2.1	—	—	0.07	0.05	0.01	0.04	—	—	
Fatality rate per cent., ...	18.9	19.8	19.4	14.3	—	14.3	15.5	6.6	12.5	10.7	15.	
<hr/>												
Estimated standard 1,000 attended confinements, ...	—	270	—	—	409	—	—	321	—	—	—	

It will be observed that—

(1) The liability to sepsis was highest in the medically attended, and lowest in the out-patient institutional cases.

(2) In the series of full-time and premature births, the fatality rate reached its highest level with the doctors' cases, and its lowest with those confined under institutional care. The relatively smaller number of the latter must be borne in mind, however, as also the fact that the institutional cases under review do not by any means represent the total number of such infections occurring within the city.

(3) With regard to the abortions and miscarriages, the vast majority of these were unattended cases, and their fatality rate was relatively low. Among the few cases of this series receiving skilled attendance there was a high fatality; but there are several obvious explanations for such a finding.

(4) Consideration of all the fatalities, and of their ratios to the standard pregnancies, reveals a very marked liability among the medically attended group; and the fatality rate for these patients was much greater than that for either the "midwife" or institutional cases. The low rate for the unattended group may be referred to the fact that these were almost all instances of post-abortion sepsis, which is, on the whole, a milder infection.

The inference is that medical attendance at a confinement definitely increases the risk of puerperal sepsis, and that the disease is more likely to end fatally in these cases. This marked liability to sepsis and fatality thus shown in the medically attended confinements is at first sight alarming. It is to be noted, however, that the group

includes all difficult and abnormal deliveries, and those in which instrumental interference was adopted whether from choice or necessity. Some doubt must also be cast on the accuracy of the figures, since many confinements at which doctor and midwife were present—and these include the majority of medically attended cases—were almost certainly initially booked and examined by the midwife, who, on finding a source of difficulty, arranged for a doctor to take charge of the case.

No real conclusions may therefore be drawn from this section of the analysis.

*Type of Birth.*—This was of interest mainly in connection with the full-time and premature cases. The chief factor considered was the frequency of natural births as compared with instrumental deliveries, where the degree of trauma and of intra-uterine interference was greater and the liability to contagion was increased. A few cases of natural delivery, and all instrumental births, were conducted under general anæsthesia, a condition not only allowing greater scope for intra-uterine manipulation, but also by inhibiting uterine contraction predisposing to puerperal infection. These cases were also segregated. The proportion of breech births—the malposition most readily understood by patients—was also estimated. An analysis along such lines showed that—

(1) In the vast majority of cases labour had been natural, whereas only a fifth were instances of instrumental delivery. Less than five per cent. gave a history of abnormal presentation.

(2) With regard to the full-time cases, the proportions of each type of labour were very similar to those obtained for the whole series. The premature births varied very markedly, however, in respect of instrumental and breech deliveries, the former being only half the proportion for the complete series, whereas the figure for breech deliveries was three times as great. Such a finding might well be anticipated, since many premature births result from such malpositions, and in them instrumental interference is rarely necessary.

(3) Among the fatal cases there was a slightly but definitely higher liability in respect of instrumental and breech deliveries. This was calculated only for the full-time cases, the figures for premature births being so small as to be valueless.

(4) Finally, consideration of the fatality rate for each type of birth revealed the fact that, while the figure was highest with the breech births and lowest among the natural, but anæsthetised, deliveries, both of these groups were small and statistically of little value. With regard to the remaining two series—the instrumental and the natural births—it appeared that the former gave a slightly higher rate.

It may be concluded, therefore, that there is on the whole a greater tendency to fatal infection in the instrumental cases.

*Duration of Labour.*—The exhaustion of a prolonged labour, or the shock of a precipitate delivery, are not the only factors at work

in this connection. A protracted labour frequently terminates in difficult instrumental delivery ; and here, as also in the precipitate type, there is a definite liability to hæmorrhage. In addition, precipitate labour frequently occurs in conditions of scant asepsis, and in prolonged instrumental births the same element must be recognised.

It might be expected, therefore, that an analysis of the full-time and premature cases, in respect of this factor, would throw some light on the incidence of sepsis, and especially of the severer types of the disease. Details were obtained from the patients, and much difficulty was experienced in gaining information which was reliable. In classifying the cases, the following standards were adopted :—

Normal duration of labour,	...	...	2-24 hours.
Precipitate labour,	...	...	Under 2 hours.
Prolonged labour,...	...	...	Over 24 hours.

From this investigation it appeared that in nine-tenths of the cases the duration of labour had been within normal limits. Of the remainder one-third averred precipitate labour, and in the others delivery had been, for various reasons, prolonged. The proportions for the full-time and premature births, when considered separately, varied little from the above findings.

With regard to the fatalities among the full-time cases, it was evident that precipitate labour gave an increased liability. The figures for the premature cases were small and of no value separately ; but the examination of the total fatalities revealed the same definite tendency to fatal infection after precipitate labour.

The fatality rate for these cases of rapid delivery was more than double that for the prolonged type. Allowance must be made, however, for the small proportion of these abnormalities.

It appears, therefore, that in the incidence of fatal sepsis precipitate labour—in most cases unattended and without interference—is of more account than the prolonged type.

*Abnormalities of the Third Stage of Labour.*—The condition of the placenta and the necessity for its manual removal were the chief factors considered in this connection. The occurrence of hæmorrhage at this stage of labour was also investigated.

The following data were obtained :—

(1) In about 20 per cent. of all cases the placenta was incomplete, and in 14 per cent. it was removed either whole or broken from within the uterus.

(2) Among the full-time and premature births the placenta was normal and expelled normally in 90 per cent. of cases. It is of interest that, of seven instances of broken manually-removed placenta in this group, four proved fatal.

(3) Consideration of the group of miscarriages and abortions showed that in more than 50 per cent. the placenta was incomplete, and that in 47 per cent. removal became necessary. As far as the fatalities were concerned, however, it appeared that on the whole such interference had no marked deleterious effect.



(4) With regard to the total fatalities, the analysis proved that the large majority were cases of normally expelled complete placenta, and that the other factors were of very minor account. The fatality rates also appeared to show that no marked liability to fatal infection could be traced to placental abnormality of this nature.

(5) Examination of the figures for hæmorrhage showed that, while 10·6 per cent. of all cases gave such a history, the fatality rate for these patients was appreciably below that for the whole series.

It is suggested, therefore, that, statistically, broken placenta or manual removal of the after-birth, or the occurrence of hæmorrhage at this stage, plays no part in determining fatality.

*Fœtal Characters.*—The sex of the infant, multiple birth, and—probably most important—the occurrence of still-birth, were the factors here considered. This section of the analysis was, of course, confined to the full-time and premature cases.

The investigation showed that, with regard to all of these patients, or considering the full-time and premature births separately, and in respect of either recovered or fatal infections, multiple pregnancy and sex appeared to have no real influence.

The comparatively small number of still-births—itsself a noteworthy feature—detracted from the significance of any data concerning them. It was suggested, however, that still-birth was associated with a liability to infection. This occurred chiefly in the premature cases, and in them and in the total series fatal sepsis and fœtal death were to some extent allied. It seems likely, however, that both of these happenings are associated with a similar factor rather than either being a causative agent.

*Rapidity of Onset of Illness after Confinement.*—In the examination of this factor the cases were segregated not only in respect of type of pregnancy, but also with regard to the severity of their disease, in accordance with the system of grouping already defined. Information as to the date of onset was obtained from the patients themselves, although in a few instances the medical attendant or midwife supplied the data required. In the full-time and premature cases dependence could usually be placed on such information, since during the puerperium the women were in bed, and the onset of any abnormal feature was readily noted by the nurse or doctor. But in the series of abortions and miscarriages such a source was usually inaccurate. These patients were rarely confined to bed or under medical care at the beginning of their illness. A large proportion of the post-abortion cases remained ambulant for days or even weeks, and when questioned traced the onset of their illness either to the day of the first hæmorrhage or to some vague period in the interval. Data of this nature must therefore be accepted with considerable mental reservation, and indeed the figures obtained in this investigation were so haphazard as to be both valueless and misleading.

In the group of full-time and premature births, the results of this analysis were briefly as follows :—



TABLE IX.

SHOWING SEVERITY AND FATALITY IN RELATION TO RAPIDITY OF ONSET AFTER CONFINEMENT IN FULL-TIME  
AND PREMATURE CASES.

		DAY OF ONSET AFTER CONFINEMENT.													
Same Day.		1st	2nd	3rd	4th	5th	6th	7th	8th-14th	15th-21st	22nd & over				
No. of cases, total.	% of total.	No. of cases, total.	% of cases, total.	No. of cases, total.	% of cases, total.	No. of cases, total.	% of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	% of total.	No. of cases, total.	% of total.
All cases,	...	39 6.4	59 9.7	88 14.5	93 15.3	64 10.5	45 7.4	27 4.4	31 5.1	116 19.1	25 4.0	20 3.3	607		
Group I.,	...	2 2.6	2 2.6	8 10.5	7 9.2	6 7.9	3 3.9	4 5.3	8 10.5	30 39.5	4 5.3	2 2.6	76		
Group II.,	...	14 5.6	27 10.8	44 17.7	39 15.7	26 10.4	20 8.0	11 4.4	8 3.2	43 17.3	8 3.2	9 3.6	249		
Group III.,	...	13 6.9	18 9.6	20 10.7	31 16.5	21 11.2	12 6.4	7 3.6	10 5.4	36 19.2	12 6.4	7 3.6	187		
Group IV.,	...	10 10.5	12 12.6	16 16.8	16 16.8	11 11.6	10 10.5	5 5.3	5 5.3	7 7.4	1 1.0	2 2.1	95		
Fatal cases,	...	12 12.2	14 14.3	20 20.4	13 13.3	9 9.2	7 7.1	2 2.0	4 4.1	10 10.2	6 6.1	1 1.0	98		
Fatality rate per cent.		30.8	23.7	22.7	13.9	14.0	15.5	7.4	12.9	8.6	24.0	5.0	16.1		

(1) With regard to the total cases, the largest percentage became fevered on the third day after confinement. A slightly smaller number sickened on the second day. By the end of the first week almost 75 per cent. had given evidence of infection.

(2) When the various groups are considered, it becomes evident that the more severe the illness the earlier did signs of sepsis occur. Thus in Group I. only 2.6 per cent. became fevered on the first day of the puerperium, whereas in Group IV. 10.5 per cent. was the figure obtained. Again, while by the end of the first week only 50 per cent. of Group I. patients had given evidence of sepsis, almost 90 per cent. of Group IV. were of this category. The large proportion of Group III. patients whose illness dated from the second week of the puerperium is noteworthy. Most of these were examples of latent infection which did not become manifest until gross pelvic involvement had occurred.

(3) Examination of the fatal cases reveals the same definite tendency to early infection. The largest proportion became ill on the second day of the puerperium, but by this date almost 47 per cent. of the fatal cases had given evidence of sepsis.

(4) Finally, an analysis of the fatality rate for each day of onset reveals again a striking bias in favour of the earlier figures, that is, the more rapid the development of signs of infection the more virulent was the disease and the more readily fatal the issue. The large rate among the cases sickening during the third week is, however, to be noted. The group was, of course, small, and data must be accepted with caution. Most of these fatalities were among the Group III. series, and usually resulted from spreading pelvic phlebitis or peritonitis, a clinical condition which, when found in association with a late onset of this nature, frequently gave definite cause for alarm. Many of these patients had been up, and had resumed normal life after a reasonable interval from their confinement, and this indiscretion had probably much part in determining the serious nature of their condition.

In conclusion, it is suggested, therefore, that rapidity of onset of this disease is in many cases an index to the severity of the infection. Whether this is related to a greater virulence of the invading organism, or to a specially lowered resistance immediately after confinement, is a question which cannot be answered here. Both factors are probably present and complementary.

*Duration of Illness prior to Hospitalisation.*—This subject is of special interest in view of the efforts which have been made within recent years to encourage early notification and hospitalisation, in the hope that at least some diminution in severity of the disease might be obtained. As in the previous section the data were calculated from statements of the patients, their medical attendants or nurses, and it was only in the full-time and premature cases that a degree of accuracy was assured sufficient to warrant their use for statistical purposes.

TABLE X.  
SHOWING SEVERITY AND FATALITY IN RELATION TO DURATION OF ILLNESS PRIOR TO HOSPITALISATION  
IN FULL-TIME AND PREMATURE CASES.

	DAY OF ILLNESS WHEN ADMITTED TO HOSPITAL.														22nd & over.	
	1st	2nd	3rd	4th	5th	6th	7th	8th-14th	15th-21st							
	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.	No. of cases, total.					
All cases,	...	...	...	...	...	...	...	...	...	...	...					
Group I.,	...	...	...	...	...	...	...	...	...	...	...					
Group II.,	...	...	...	...	...	...	...	...	...	...	...					
Group III.,	...	...	...	...	...	...	...	...	...	...	...					
Group IV.,	...	...	...	...	...	...	...	...	...	...	...					
Fatal cases,	...	...	...	...	...	...	...	...	...	...	...					
Fatality rate per cent.,	180	16.9	21.4	14.1	14.7	15.0	8.7	8.7	—	—	—					

When the total 800 patients are considered, the average duration of illness prior to hospitalisation is found to be 4.4 days, and if the series of abortions and miscarriages are omitted the rate remains at 4.1 days. This is a great improvement on the nine days reported by Reid<sup>5</sup> two years ago, but there is still room for betterment. Theoretically, all patients should be admitted to hospital in the first or second day of illness, but of the whole series only 289 were of this category. Many women whose infection proved fatal had been treated in the unsuitable circumstances of their own homes for several days prior to admission. In the fatal cases, the average duration of illness before hospitalisation was 4.9 days, but there were many who had been febrile for a much longer period, and earlier specific treatment might have averted this fatal issue.

The more detailed analysis of the full-time and premature cases is contained in Table X.

From this table the following facts may be subtracted. It is to be remembered that in almost every instance these patients had been under continuous supervision of either doctor or midwife since the day of confinement, and delay in hospitalisation could reasonably have been avoided in the majority of cases.

(1) Considering the series as a whole, the largest proportion—almost a quarter of the total—was admitted on the second day of illness. Almost 50 per cent. were in hospital on or before the third day of illness, and this is undoubtedly a satisfactory figure. It should be noted, however, that 11.4 per cent. were not admitted until the second week of illness, surely a delay not entirely due to lack of skilled attendance or to a doubtful nature of the illness.

(2) Separate analysis of the various groups reveals somewhat similar findings, and statistically there does not appear to have been any gross delay in notification of the more serious types of infection.

(3) With regard to the fatal cases, 59 per cent. were in hospital on or before the third day of illness, and over 70 per cent. before the fourth day. These are, on the whole, satisfactory figures; but in view of the fact that the majority of these patients were under medical supervision since confinement the delay thus represented does not appear entirely justified. It is of interest that 10 per cent. of the fatal cases were admitted to hospital on the first day of illness, that is, immediately signs of infection were manifest. There still remains, however, almost 10 per cent. of fatal cases admitted after more than a week's illness. How far earlier hospitalisation would have helped these is a matter for conjecture.

(4) Finally, there is to be noted the fatality rate for the different periods. The highest rate was among the patients admitted on the third day of illness, but the figures for the two previous periods were very little below this rate, and until the sixth day the percentage remained high. Allowance must be made, however, for the smaller numbers in the later groups.

The statistical impression thus obtained is that, on the whole, early notification and hospitalisation were practised, and that the severity of the illness did not appear to undergo any marked diminution on this account. This is not entirely in accordance with the clinical estimate, and in practice it was often very evident that there had been unnecessary delay in notification, so that the prognosis was affected thereby.

*Summary of Statistical Conclusions.*—The foregoing analysis of 800 cases of puerperal sepsis has suggested the following conclusions :—

(1) Septic abortion and miscarriage play a very important part in the maintenance of puerperal sepsis and mortality rates.

(2) The large majority of fatalities are due to septicæmia rather than to gross pelvic infection or peritonitis.

(3) The more fatal types of the disease are found in women over 35 years of age ; in multiparæ rather than primiparæ ; in women who have had an earlier attack of the disease ; in those who, for whatever reason, have had instrumental interference ; and in cases where signs of infection developed rapidly after confinement.

(4) Illegitimacy, abnormalities of the third stage of labour, sex of the infant, or multiple birth, are of little influence in determining the onset of infection.

(5) Still-birth is frequently allied to severe or fatal sepsis.

(6) Duration of labour is of minor importance, but precipitate labour is, on the whole, more productive of infection than the prolonged type.

(7) Confinements attended by doctors are most liable to be followed by severe or fatal sepsis ; but more reliable figures are necessary in this connection.

(8) On the whole, early notification was practised ; but a small proportion of serious infections could definitely be attributed to failure in ensuring early hospital treatment.

## BACTERIOLOGY.

In this respect there were four main lines of inquiry :—

- (1) Cultivation of organisms from the cervix, and, where possible, from the endometrium ;
- (2) Cultivation of organisms from the blood ;
- (3) Examination of material from secondary suppurative processes during life and at post-mortem ; and
- (4) Tests for cutaneous sensitiveness.

*Cultivation of Organisms from Cervix and Endometrium.*—The former site was chosen in the vast majority of cases, as it was considered unjustifiable and unnecessary to pass an instrument through the septic atmosphere of the cervix for the purpose of obtaining an intra-uterine smear. All cases were so examined on admission, and 237 were similarly tested prior to dismissal from hospital.



The organisms found fell into six categories :—

- (1) Streptococci alone.
- (2) Streptococci in combination with other organisms.
- (3) Staphylococci alone.
- (4) Pneumococci alone.
- (5) Bacillus coli alone.
- (6) Other organisms alone or in combination with staphylococci, pneumococci, or bacillus coli. These included diphtheroids, diplobacilli, and various unclassified diplococci. The gonococcus was found alone in three cases.

In the series of full-time and premature births, the findings were as shown in Table XI.

TABLE XI.

SHOWING ORGANISMS FOUND IN CERVICAL SMEARS OF FULL-TIME AND PREMATURE CASES.

Type of Case.	No. of Cases.	Strep.	Strep. with other organisms.	Staph.	Pneum.	B. Coli.	Other organisms.
Group I., ...	76	23	7	20	11	10	5
Group II., ...	249	103	25	48	25	30	18
Group III., ...	187	68	21	31	30	20	17
Group IV., ...	95	45	30	4	7	6	3
All cases, ...	607	239	83	103	73	66	43
Rate per cent., ...		39.3	13.7	16.9	12.0	10.9	7.2

Strep. = Streptococci; Staph. = Staphylococci; Pneum. = Pneumococci; B. Coli. = Bacillus Coli.

Streptococcal infections thus accounted for 53 per cent. of this series.

In the post-abortum series the results were somewhat similar.

TABLE XII.

SHOWING ORGANISMS FOUND IN CERVICAL SMEARS OF POST-ABORTUM CASES.

Type of Case.	No. of Cases.	Strep.	Strep. with other organisms.	Staph.	Pneum.	B. Coli.	Other organism.
Group I., ...	36	8	4	11	1	9	3
Group II., ...	99	34	13	10	13	22	7
Group III., ...	41	16	18	4	1	2	—
Group IV., ...	17	9	6	—	2	—	—
All cases, ...	193	67	41	25	17	33	10
Rate per cent., ...		34.8	21.2	13.0	8.7	17.1	5.2

Streptococcal infections were here present in a slightly higher percentage—56 per cent.—of the series, but the difference is so slight

as to be of accidental occurrence. Of the total 800 cases, therefore, 54·5 per cent. were the result of streptococcal invasion, and this figure is in agreement with the findings of most recent workers.

Analysis of the preceding tables reveals the following relationship between the frequency of streptococcal infection and the severity of the disease.

TABLE XIII.

SHOWING RELATION BETWEEN STREPTOCOCCAL INFECTION  
AND SEVERITY OF DISEASE.

Group.	Percentage of full-time cases with Streptococcal Infections.	Percentage of post-abortion cases with Streptococcal Infections.
I., ... ..	39·9	35·3
II., ... ..	52·3	47·7
III., ... ..	47·9	82·9
IV., ... ..	78·9	88·2

The slight decrease in frequency, seen in the full-time cases of Group III., may be related to the fact that when the parametrium is invaded the streptococci in many cases disappear from the surface tissues, and repeated examination may then reveal only secondary organisms. Frequently also the cervical and uterine lesions are practically healed at this stage, and streptococci cannot be cultivated from them. The high proportion of streptococcal infections in Group III. abortions is also of note, and is doubtless due to the fact that active intra-uterine sepsis and extensive pelvic invasion are frequently concurrent in these cases.

*Fatal Cases.*—The whole series included 122 fatal infections, and Table XIV. shows the incidence of the various organisms in these.

TABLE XIV.

SHOWING ORGANISMS IN CERVICAL SMEARS OF FATAL CASES.

Organisms.	Strep.	Strep. with other organisms.	Staph.	Pneum.	B. Coli.	Other organisms.
No. of cases, ...	59	38	2	9	10	4
Rate per cent.,	73·5		1·5	6·8	8·2	3

The high proportion of cases in which the streptococcus was the dominating feature is again noteworthy.

*Examination on Dismissal.*—With regard to the 237 patients who were examined prior to dismissal, it was found that 55 of these, i.e., 23 per cent., still showed streptococci in cervical cultures. This will be found of interest in the later discussion of treatment.

#### CULTIVATION OF ORGANISMS FROM THE BLOOD.

This examination was made on admission in all patients who appeared seriously ill, and at later dates in those who developed septicæmic symptoms.

*Full-time and Premature Births.*—Of these cases, 174 came under review, and Table XV. gives a summary of the results obtained in them.

TABLE XV.  
SHOWING RESULTS OF BLOOD CULTURE IN FULL-TIME AND  
PREMATURE CASES.

Type of Case.	No. of Cultures.	Strep.	Staph.	Pneum.	B. Coli.	No growth.
Group I., ...	6	—	—	—	—	6
Group II., ...	30	1	—	1	—	28
Group III., ...	43	11	2	—	—	30
Group IV., ...	95	70	—	7	5	13
All cases, ...	174	82	2	8	5	77
Rate per cent., ...		47·2	1·1	4·7	2·8	44·2

Thus, of 97 cases giving a positive blood culture, 84·5 per cent. were streptococcal in character; while in the group as a whole the blood culture was positive in 55·8 per cent. of cases, and of this number the streptococcus was the causal agent in 47·2 per cent.

*Post-abortion Cases.*—Here 32 patients were analysed.

TABLE XVI.  
SHOWING RESULTS OF BLOOD CULTURE IN POST-ABORTUM CASES.

Type of Case.	No. of Cultures.	Strep.	Staph.	Pneum.	B. Coli.	No growth.
Group I., ...	—	—	—	—	—	—
Group II., ...	3	2	—	—	—	1
Group III., ...	12	6	—	—	—	6
Group IV., ...	17	9	—	3	—	5
All cases, ...	32	17	—	3	—	12
Rate per cent., ...		52·5	—	10·0	—	37·5

In this series 20, or 62·5 per cent., gave evidence of blood infection and of that percentage 52·5 were streptococcal. Of the post-abortion cases which gave positive blood culture, therefore, 85 per cent. were streptococcal infections. Thus in all, organisms were cultured from the blood in 117 patients, and in 84·7 per cent. of these septicæmia was due to the streptococcus hæmolyticus. In his recent investigations Smith<sup>6</sup> found 88 per cent., and various workers have had corresponding results.

*Fatal Cases.*—In 117 of these, blood culture was made or at post-mortem splenic pulp examined.

TABLE XVII.

SHOWING ORGANISMS IN BLOOD CULTURES OF FATAL CASES.

Organisms.	Strep.	Staph.	Pneum.	B. Coli.	No. growth.
No. of Cases, ...	89	1	6	3	18
Rate per cent., ...	76.2	0.8	5.1	2.5	15.4

It will be noted that 99 fatal infections gave proof of blood invasion. These amounted to 84.6 per cent. of the cases so examined, and among this number 76.2 were found to be of streptococcal type.

#### EXAMINATION OF MATERIAL FROM SUPPURATIVE FOCI OR AT • POST-MORTEM.

Such foci included pyæmic infections of joints, muscles, and skin ; peritoneal effusions found at abdominal operations ; and pus from parametric and mammary abscesses. In all, 89 cultures were made and the results were as shown :—

TABLE XVIII.

SHOWING ORGANISMS IN SECONDARY SUPPURATIVE FOCI, &amp;C.

Organisms.	Strep.	Staph.	Pneum.	B. Coli.	Diphtheroids.	Other Saprophytes.
No. of cases, ...	79	3	2	3	1	1

Of the cases so examined, therefore, 88.7 per cent. revealed the presence of streptococci. This is in agreement with the findings of most workers, many indeed affirming that all secondary foci are due to this organism.

#### TESTS FOR CUTANEOUS SENSITIVENESS.

These were undertaken to discover whether any relationship could be traced between the toxins of puerperal and scarletinal organisms ; and in how many women the puerperal infection was caused by a scarlet fever type of streptococcus or by one closely allied to it. The test was performed in accordance with the accepted method of Dick testing, and was made on admission to hospital, scarletinal toxin being injected intradermally on one forearm and puerperal toxin on the other. Control solutions were considered unnecessary in a comparative test of this nature, and were thus dispensed with. The puerperal toxin was derived from organisms isolated by blood culture from a previous patient and was prepared by the method of Lash and Kaplan<sup>7</sup>, dilutions of 1 : 100 and 1 : 250 being employed.

In this respect 82 patients were examined, and of these 37 were found to be toxin sensitive to a marked degree. The practice was discontinued for the following reasons :—

- (1) The administration of curative (antitoxin) serum was of necessity delayed for at least 24 hours, and in many cases such delay did not appear justifiable ;
- (2) Dosage was difficult, and it seemed impossible to determine how far lack of reaction was due to insensitiveness of the patient, and how far to lack of potency in the toxic solution ;

- (3) The results which were obtained appeared very inconsistent and contradictory when related to the bacteriological and clinical condition ; and
- (4) Only five women proved sensitive to the scarletinal toxin, and as a means of comparison it was, therefore, valueless.

### CONCLUSIONS.

Even among early observers, streptococcus pyogenes came to be regarded as the most frequent cause of puerperal infection and the chief agent in determining death ; and in 1926 it was concluded by Colebrook<sup>8</sup> that 90 per cent. of cases were due to this organism. Within the past few years, however, doubt has been cast on such an assertion. Schwarz and Deickman,<sup>9</sup> writing in 1927, described a technique whereby anærobic types of streptococci might be isolated, and claimed that these were equally as potent as the ærobic variety. Other workers have adduced results which appear to confirm such views. The present investigation includes 15·4 per cent. of fatal cases whose blood appeared sterile when cultured repeatedly by ærobic methods, and it is possible that a few of these may have been examples of the anærobic infection of which Schwarz writes. But the figures prove conclusively that ærobic streptococcal infection is by far the most potent cause of death.

It must be admitted that there is a great variety of organisms in the genital tract during the puerperium, and that sepsis is not necessarily associated with streptococcal infection. Serious forms of the disease are, however, definitely related to these organisms, and the greater the severity of the disease the higher is the incidence of this type of infection. Of the fatal cases in this series, 73·5 per cent. were found to have streptococci in the local lesion, and in at least 76·2 per cent. the blood contained the same organism. If serious morbidity and death from puerperal infection is to be avoided, therefore, concentration on the streptococcus is essential. Thus treatment of the disease in the large majority of cases would appear to be centred round those remedies which have a specific action on the streptococcus.

### TREATMENT.

In determining the relative merits of different forms of treatment, it is important to realise the many benefits which hospitalisation in itself affords—a factor frequently overlooked by those who advocate remedies. Admission to a hospital ward entails in the first place freedom from the worries and from the actual presence of home and family ; but scarcely less important are the comfort and cleanliness of the hospital bed and the essential cleansing of the patient herself in a way which is in most cases impossible in her home conditions. It would be difficult also to over-estimate the value of a simple ward routine. Many cases respond to hospitalisation in a remarkable way, and it is doubtless a factor of much importance in determining the total effect of more specific methods of treatment. Experience provided by this series definitely proved that cases potentially of a



severe type might well be saved from the more serious stages of illness if early notification and hospitalisation were widely practised.

A consideration of the question of treatment divides itself naturally into two main aspects—the local lesion, and the generalised infection or toxæmia—and the long and varied list of methods which have from time to time found favour is not only a tribute to their ineffective character, but illustrates the changing theories concerning the disease. With regard to local treatment, the introduction of glycerin into the uterus—a procedure described and popularised by Remington Hobbs<sup>10</sup>—has within the past few years assumed much importance; while in the field of general remedies antitoxin sera, organic preparations of arsenic and mercury, and, recently, vitamins, have attracted chief attention.

In the present investigation the above-mentioned methods were used and their results critically reviewed in the light of a clinical and statistical analysis. Various adjuvant procedures, chiefly of local treatment, were also tested. Among these were simple postural drainage of the uterus, intra-uterine douching or irrigations, and ichthyol disinfection of the lower parts of the genital tract. Space does not permit of other than this brief mention of these, and the following summary deals with the special methods already noted.

#### INTRA-UTERINE GLYCERIN INJECTIONS.

The aim of all local methods of treatment is to combat the disease at its source, to limit its spread, and prevent toxic absorption, and to promote healing of the perineal, vaginal, uterine, and adnexal lesions: and many recent workers affirm that the application of glycerin to the local treatment of puerperal sepsis is of most dramatic and far-reaching importance.

The therapeutic value of glycerin has been attributed mainly to its physiological action as a lymphagogue, which, by setting up drainage, results in a washing away of bacteria from the surface and from the deeper layers of the inflamed tissues, a “lavage à retro” being thus obtained. Compton<sup>11</sup> has, however, proved that there is, in addition to osmosis, a definite bactericidal or antiseptic effect, the latter being the rule in the weaker dilutions. Other writers<sup>12</sup> deny such an action, suggesting that some unexplained biochemical factor is responsible for the good results obtained. The non-irritant character of glycerin—a property possessed by few efficient antiseptics—is also claimed to make it superior to all other substances for intra-uterine use.

Of the total series, 402 patients received this type of local treatment, the technique employed being similar to that in use at St. Mary Abbot's Hospital, where, under the championship of Hobbs, glycerin treatment has reached the apex of its fame. There, however, the injections are given at intervals of six to twelve hours, whereas the present experience was that one treatment daily was all to which most patients would consent, no matter how painless the procedure. Such an arrangement also necessitates very special facilities with regard to nursing and medical staff.

Catheterisation of the uterus formed the first part of the treatment. In many cases this revealed the presence of intra-uterine pus, and in a few such instances gentle saline irrigation was practised. Sterile glycerin was thereafter injected slowly from an ordinary glycerin syringe, which was slipped on to the end of the catheter already *in situ* within the uterus. The amount of glycerin required varied with the degree of sepsis and with the stage of the puerperium, as much as 30 cubic centimetres being frequently necessary in recently-delivered or grossly-infected cases. Daily diminution in the capacity of the uterus was usually noticeable.

The number of injections varied with the individual response. In this series of 402 women, 2,069 daily treatments were given—an average of 5.6 injections per patient. A few fatal and mild cases required only one or two injections, however, and, on the other hand, there were many who required ten or more before involution was established and sepsis controlled.

#### CONTRAINDICATIONS TO GLYCERIN TREATMENT.

The lesions which many patients present make it difficult to stand aside and do nothing, and there is no doubt that, as a means of local treatment, glycerin has much to recommend it. Hobbs will admit of no contraindications, but this investigation proved that there were several types of patient in whom pursuance of the glycerin régime was distinctly inadvisable.

(1) Patients with marked toxæmia or definite septicæmia could not withstand the movement and manipulation which the treatment demanded, even when carried out—less effectively—in bed. These patients have often severe local sepsis and might be expected to benefit in the highest degree, yet must be denied glycerin drainage in almost all instances. Cases complicated by pneumonia, even when this was of the simpler broncho-pneumonic type, similarly proved unsuited.

(2) In patients with spreading pelvic infection, the local interference and the assumption of the lithotomy position were found to result frequently in a further extension of the inflammatory process. Cases complicated by peritonitis, not only of the generalised type but also milder pelvic effusions, were thus in the highest degree unsuited for glycerin treatment.

(3) With regard to phlegmasia alba dolens, in many patients with this complication the treatment was inapplicable, since the cervical os was closed and the uterus involuted. But in many cases otherwise suitable the risk of embolism contraindicated local treatment of this nature.

(4) For obvious reasons, patients with mental disturbance were debarred. Several cases of mild mania became uncontrollable after the excitement and strain of the procedure, especially when the treatment was carried out in the operating theatre.

(5) Finally, there were many patients who had very foul sepsis of the perinæum, vagina and cervix, in whom even thorough cleansing of these parts did not remove the risks of carrying infection upwards during the treatment.

## ADVANTAGES OF GLYCERIN TREATMENT.

There were several distinct advantages from the pursuance of this treatment in suitable cases.

(1) Thorough daily cleansing of the perinæum, vagina and cervix was assured, and rapid healing promoted. An abscess of any other region would be dressed daily. Why not a foul sloughing vagina or a gangrenous cervix?

(2) Constant drainage from the uterus was maintained by the daily catheterisation and by the removal of pus and debris frequently found blocking the cervical canal.

(3) The glycerin which was injected definitely increased drainage from the œdematous congested uterus, so that involution occurred.

(4) Hobbs lays great stress on the value of glycerin as a substitute for digital curetage, and recommends its use in all cases where placental fragments or membrane are retained, or even when the whole placenta is within the uterus. The experience provided by this investigation proved that intra-uterine glycerin injections alone could rarely be relied upon to cause separation or expulsion of any such retained material; but it was found distinctly advantageous to give several injections before resorting to digital intra-uterine interference. In this way a cleaner atmosphere was created within the uterus, and the risks of spreading the infection were mitigated. Many post-abortion cases had such profuse hæmorrhage, however, that such delay was not warranted.

(5) Definite evidence was forthcoming that women who received intensive local treatment of this nature were, at the conclusion of their illness, more likely to be absolutely free of infection than those treated only on conservative lines. An analysis of 237 patients who were bacteriologically examined prior to dismissal is given below.

TABLE XIX.

SHOWING RELATION BETWEEN TREATMENT AND PERSISTENCE OF ORGANISMS.

Treatment.	Glycerin.	Conservative.
No. of cases, ... ..	169	68
No. of positive smears, ... ..	11	44
Rate per cent. of positive smears,	6·5	64·7

Thus only 6·5 per cent. of those who had been treated with glycerin still harboured the infecting organism, whereas 64·7 per cent. of those who received no local treatment were found to be potentially infective. This is striking proof of the efficacy of the régime, if not of the glycerin which forms its basis.

## CONCLUSIONS.

In assessing the value of this treatment, for which so much is claimed, full account must be taken of the benefits of hospitalisation and of the various general remedies which are given to all but the mildest cases. A personal estimate may best be given by reference to the types of infection under review.

*Group I.*—A few women of this group were suitable for glycerin treatment and appeared to benefit by it, but most of these patients did not require intensive local medication, and it was concluded that other factors being equal, just as good healing was obtained by less extreme measures.

*Group II.*—Treatment along such lines seemed to be the most rational for the women of this group. The chief requirement of these patients was adequate uterine drainage, and the glycerin régime ensured this to an extent unapproached by any other local method or by the conservative routine. Hobbs claims that in the absence of local treatment 50 per cent. of such cases still harbour pus within the uterus; and it is alarming to realise in how many of this series the organ was found functioning as an abscess—a condition undetected and untreated under the conservative régime. Daily glycerin injections frequently gave gratifying results, even when this was the only treatment pursued. Alone glycerin gave no dramatic benefit, but gradual diminution of temperature typically occurred. Sudden improvement, such as a temperature crisis, was rarely due to glycerin treatment, but was more probably the result of relieving a mechanical obstruction to drainage, in cases where the endometrium itself was fairly healthy. It did not appear that in established septic endometritis there was much danger of spreading the infection by reason of this interference. The injections were given slowly and without force; and of the group no woman exhibited rigors and no special tendency towards pelvic complications was noted.

*Group III.*—This is the debatable field for glycerin treatment. Hobbs maintains that the injections should be given when the adnexa are involved and even when the peritoneum is affected, but the results here obtained did not support such a statement. A few women within the group appeared definitely improved as a result of glycerin medication, and no gross extension of the infection was noted; but these were less virulent cases in whom the main sepsis was still intra-uterine. In many patients with established pelvic infection, manipulations within the uterus merely served to aggravate the condition; and, moreover, the treatment became difficult and painful in the presence of any extra uterine focus. It was found that vaginal examinations should be minimised if there was active pelvic sepsis or even a mild phlebitis of the iliac vessels; and for that reason many cases of Group III. were quite unsuited for local treatment by this or any other method. A certain familiarity was achieved in judging which patients of the group could with safety be given injections of glycerin, but the facility was sometimes dearly bought: and even when the treatment was pursued only in specially chosen cases it did not appear to exert any favourable influence on the extra uterine lesions which, clinically at least, merely ran their ordinary course.

*Group IV.*—The women in this group were in the vast majority of cases quite unsuited for glycerin treatment. These patients gave



the greatest hope of recovery if they were moved as rarely and as gently as was compatible with efficient nursing ; only general methods of treatment being pursued and the local lesion—no matter how active—being left rigorously alone.

*Post-abortionum Series.*—The foregoing discussion applies chiefly to the full-time cases, but little more need be said with regard to the post-abortionum group. In these patients the uterus and its cavity were usually much smaller than the full-time puerperal organ, and in Group I. cases especially the glycerin treatment was really inapplicable. Patients falling into the category of Group II. showed a marked response to this method of treatment, although glycerin seldom replaced curetage in the incomplete cases. With regard to Group III., the glycerin régime appeared to be even more definitely contraindicated than in the full-time cases of the same group, and this may be related to the greater tendency for massive pelvic infection in the post-abortionum series. Lastly, in Group IV., as in the full-time cases, local treatment with glycerin was definitely to be avoided.

#### GENERAL METHODS OF TREATMENT.

The specific general methods adopted in the treatment of puerperal infection have for their aim the neutralisation of the toxæmic and septicæmic manifestations of the disease. They become increasingly important in the stages between the localised types of the disease and those severer forms where there is evidence of absorption of inflammatory products, and they are the outstanding factors in the fully-established septicæmic type where the general infection constitutes the major problem.

Such general remedies are of three main types :—

- I. Those which aim at killing the causative organisms or neutralising their toxins, e.g., quinine, specific sera, and arsenical and mercurial preparations ;
- II. A second group designed to raise the bodily resistance against infection, e.g., vaccines and vitamins : and
- III. Lastly, a group of substances which have mainly a diluting influence on the infection, e.g., salines.

In the present investigation, all of these were tested, with the exception of vaccines ; and the following brief observations may be made with regard to them.

*Quinine.*—This drug has long enjoyed much repute as a uterine stimulant and as a general antiseptic to the blood and tissues, and for this purpose it is given orally in most cases. Preparations for hypodermic administration are also available, but these are apt to be followed by painful sloughing sores at the site of injection and were avoided, therefore, in this investigation.

The profundity of established puerperal toxæmia or septicæmia makes it almost impossible that quinine could ever have any real value as a method of treatment in this disease, and even as a pro-



phylactic measure its effect seemed doubtful. Although it is generally believed that quinine stimulates uterine contractions and may thus promote involution, it is difficult to understand how the drug can have any such effect on a uterus whose musculature is saturated with toxins and organisms, and more so if in addition the cervix is mechanically obstructed by spasm, malposition, or placental debris. Experience of this form of general treatment in 75 patients led to the conclusion, therefore, that in established sepsis the therapeutic value of quinine could not be other than minimal.

*Serum.*—Specific sera are utilised for their antitoxic and antibacterial effect, and, theoretically, if they are to be effective they must contain antibodies in respect of the organism with which the patient is infected. Smith<sup>3c</sup> has suggested that in streptococcal infections an antitoxic serum, whether prepared for scarlet or puerperal fever or for erysipelas, will help to combat the exotoxic action of either of these organisms. That is, the exotoxins will be neutralised by any monovalent antitoxin. There is, however, no clinical support for such a theory, and, although scarletinal antitoxin in a few cases neutralises, wholly or partially, puerperal fever toxin, it is possible that in these cases the puerperal infection is due to a scarlet fever streptococcus or to one closely allied to it.

To be of perfect value, however, specific serum must also be antibacterial, this property being in respect only of the homologous organism. It has been claimed that scarletinal antiserum has this property, but in the hands of most observers it has given disappointing results in a test of this nature, and recent research<sup>13</sup> has proved that in no way does serum increase the bactericidal power of the blood even against homologous organisms.

Apart from the serum prepared against the streptococcus of erysipelas, there are available three types of antistreptococcal serum—puerperal, multivalent, and scarletinal—and all three have been advocated as specific general remedies in the treatment of puerperal sepsis. In the present investigation, 395 patients received serum. For 40 of these the puerperal and multivalent varieties were used, but the results obtained were disappointing except in occasional cases of no great severity. The scarletinal antiserum was, therefore, selected for more extensive trial.

There are three main objectives in serum administration. The first—the prophylactic—is recommended for non-septic cases and for patients of Group I. who show little evidence of streptococcal invasion. A second objective aims at combating toxæmia in the moderately ill and severer cases where the infection is still local and the blood culture negative, i.e., in Group II. and Group III. patients. The third objective aims at utilising the antitoxic and antibacterial powers of the serum in established septicæmia, i.e., in Group IV. cases. The problems of dosage are great, but in the main the amount of serum required increases in the above order.

Experience of scarletinal antiserum afforded by this investigation has led to several definite conclusions regarding it.

*Prophylaxis.*—There is undoubtedly a wide and useful field for serum in this connection. By its use non-septic cases and milder infections may be safely treated in puerperal fever wards without sepsis arising. Recently Cameron and Thomson<sup>14</sup> have proved beyond doubt the prophylactic value of serum, and have shown that women in maternity hospitals, if protected in this way, become incomparably less liable to develop puerperal pyrexia. But the real test of serum as a prophylactic measure is the protection which it affords to patients nursed in circumstances less ideal, and the puerperal ward with its contagious atmosphere is eminently suited for such a trial. The results proved unquestionably that prophylaxis by serum should be a routine measure in all cases where a source of infection is at hand, and, if not after every confinement, certainly in those where the slightest departure from normal has been experienced.

*Antitoxic Effect.*—Puerperal fever is a disease in which there is not only a generalised toxæmia, but, in addition, a gross, active, bacterial lesion, and serum cannot, therefore, be expected to produce the same immediate results often obtained in scarlet fever where the toxæmia is almost the sole manifestation. From a consideration of the results obtained in this connection it was concluded that—

- (1) Some very toxic patients received immediate and lasting benefit, even with moderate dosage. These were all cases of streptococcal infection, and it is possible that the serum was prepared from a homologous organism ;
- (2) A few patients showed slight improvement, which was in some cases permanent, but in others only of a temporary nature. In some of these, larger dosage might have produced the dramatic results obtained in the preceding group, although they did not appear more toxic or otherwise in need of this extra amount ;
- (3) There was a large group of patients whose general condition was in no way influenced by the exhibition of this serum, although many were cases of streptococcal infection ; and
- (4) In a final assessment of the antitoxic value of serum, dosage and early administration were important, in that a small early injection might be prophylactic rather than curative ; but the results also proved that even in later cases of severe toxæmia, serum was of value so long as it was or nearly approached to "type." This is probably the real answer to the varying effects of serum administration in these toxic cases, where presumably its results should be most outstanding.

*Antibacterial Effect.*—The problems of septicæmia differ markedly from those of the simpler toxic state, and the necessity for finding an adequate method of treatment for this large group of patients justifies a special analysis of the effects of serum on them. There were 83 Group IV. patients treated by this means, and among these

37 received serum intensively by the intravenous route. It was concluded that—

- (a) Scarletinal antiserum was not definitely bactericidal ;
- (b) The serum was antitoxic in a high degree to certain types of streptococcus. Its effect was entirely antitoxic, and the degree of such effect depended on whether the infection was by a scarletinal organism or by one closely allied to it ;
- (c) In septicæmia, if the accompanying toxæmia was neutralised, the patient became more able to deal with the bacterial element of her blood infection, and occasionally she was completely successful in this ;
- (d) In many cases, however, although toxæmia might be neutralised bacteriæmia persisted and proved fatal ;
- (e) Probably in most instances the absence of effect was due to the fact that infection was not by a homologous organism, and the serum had, therefore, little or no antitoxic value for the patient who received it ; and
- (f) A type (serological) specific antibacterial serum is, therefore, necessary.

*Arsenical Preparations.*—Under the championship of Colebrook and his co-workers<sup>15</sup> organic preparations of arsenic have recently come into much repute as a means of treatment in streptococcal infections. It is claimed that in nearly all patients arsenic increases the power of the blood to kill these organisms, and that in every case so treated the bacteriostatic power of the serum is much enhanced. The disadvantage of most arsenical compounds is that they are extremely irritant, and are apt to cause severe local pain or even abscess if injected subcutaneously. As a rule, however, if the preparation is painless it is also valueless as a bactericidal agent. The compound in most common use—Metarsenobillon or M.A.B.—is reputed to be practically non-irritant, not liable to cause local abscess, and yet eminently toxic to the invading organisms ; and this drug finds strong supporters in Colebrook and his colleagues. Sulpharsenol is a preparation equally successful in the hands of French<sup>16</sup> workers. Both of these drugs were used and tested in the course of this investigation, and the following brief observations may be made with regard to them :—

#### *Metarsenobillon.*

The results of treating 89 patients with this compound were unsatisfactory from many points of view.

(1) The injections—which were given in the same sequence and dosage as that employed by other workers and were made intramuscularly—caused severe local pain and discomfort persisting for days and even weeks. Although no abscesses occurred at the site of injection, the giving of the minimum number of four doses was in many cases only with difficulty accomplished.

(2) Several of the less severe infections appeared to benefit, but all of these were receiving concomitant local treatment and the value of the arsenic was doubtful.

(3) Among the Group III. patients treated by this means, many developed signs of septicæmia and of spreading pelvic infection while the treatment was actually being pursued; and an analysis showed that blood culture became necessary to a much greater extent among them than among similar cases treated along different lines.

(4) In the Group IV. series the drug proved entirely useless. No confirmed case of septicæmia recovered as a result of this treatment; whereas in many blood infection developed and increased in spite of the injections.

(5) Of the women so treated, none affirmed improvement as a result of it—a frequent occurrence among those who received scarletinal serum—and there were no obvious indications of diminished toxæmia. In effect, none of the outstanding results obtained by other workers were here observed; and the procedure was eventually abandoned as the great pain and mental upset caused by the injections did not appear justified.

#### *Sulpharsenol.*

Experience of this arsenical compound was confined to twenty patients, and in none were any definite curative effects noted, even in the milder degrees of infection. As a vehicle for the administration of arsenic in the chronic phases of the disease it was, however, of some use. The effective dosage recommended by those who advocate this line of treatment in septic cases varies within very wide limits, and this in itself is an indication of its doubtful value. A few anæmic patients appeared to benefit by subcutaneous injections of .18 gm. given at intervals of three to four days, but on the whole sulpharsenol seemed useless as a means of active treatment in this disease.

*Mercurial Preparations.*—The preparation in most common use is mercurochrome. This drug was the outcome of research designed to find some organic compound of mercury, which would combine the strongly antiseptic property of its inorganic salts while remaining free of their toxic effects. Many writers claim outstanding results from the intravenous administration of mercurochrome in various septic conditions; and as a bactericidal agent in puerperal septicæmia it finds many supporters. In this investigation, experience of its action was limited to eight patients of Group IV., and since all of these died, it was obvious that, at any rate, mercurochrome had no miraculous property in the treatment of streptococcal infection. It appeared also that its administration was not devoid of risk, since of the patients so treated three became rapidly worse and a fatal issue was precipitated. A colossal brand of mercurochrome, employed for the remaining five cases, did not produce such definite toxic effects, but further experience in this respect, and with regard to the drug as a whole, is necessary before definite conclusions can be drawn as to its curative value.



*Salines.*—Salines may be given rectally, subcutaneously, or intramuscularly, and are useful for their stimulant and diluting effect in all toxic conditions. It is not to be expected that any specific action should follow such a line of treatment, and no immediate results with regard to temperature, pulse rate, or toxæmia were observed in any cases of this series who received such injections, even when the saline was administered by the intravenous route.

French workers have recently shown a tendency to pursue this line of general treatment to the exclusion of all other methods, and for this purpose both isotonic and hypertonic solutions have been recommended by them. It is claimed that leucocytosis is stimulated by the higher concentration, and that septicæmia may be cured as a result of this; but, although there is no doubt that saline injections are in all cases beneficial, they should be administered in addition to, rather than to the exclusion of, other more specialised forms of treatment.

*Vitamines.*—The early researches of Mellanby and Green<sup>17</sup> led them to the conclusion that, apart from the promotion of healthy growth, the chief and most important function of vitamin A is to raise the resistance—either local, or general, or both—to bacterial infection. According to the same workers, the pregnant woman is in great danger of a deficiency of this vitamin, since she must supply not only her own body, but that of the rapidly, growing foetus, with adequate amounts of it, and it may be supposed, therefore, that she enters her puerperium grossly depleted of vitamin A, and thus extremely liable to develop sepsis should suitable organisms be present.

Acting on the above assumption, Mellanby and Green<sup>18</sup> advocate the use of vitamin A, both as a prophylactic and as a cure for puerperal sepsis, and they adduce impressive results from the pursuance of this line of treatment. Of the present series, 86 patients received treatment with vitamin A after the same manner as and under the direction of its originators, and the conclusions made were as follows :—

(1) Among the patients in Groups II. and III., in no instance could any definite benefit be traced to the use of this drug. Febrile temperatures persisted, pelvic infections spread, and toxæmia was quite unaffected, in spite of continued and adequate dosage.

(2) It is in the Group IV. cases, however, that any conclusive signs of benefit should be apparent, and 18 women clinically septicæmic received this form of general treatment. The results appeared to show that vitamin A as a bactericidal agent in blood infections was practically valueless. Only two of these patients recovered, and in both of these the illness was of several months' duration, so that the recovery was with reason ascribed to their own antibacterial powers. With regard also to the patients who died, in no case was there evidence of enhanced resistance as a result of this treatment.

(3) On the whole, it was concluded, therefore, that although vitamin A may gradually increase the general resistance and the organismal infection may thus become controlled, this does not



reach a degree sufficient to deter any but the least virulent types of sepsis, in which a similar effect could be obtained by less specific measures.

#### STATISTICAL ANALYSIS OF TREATMENT.

In determining the value of various methods of treatment the personal factor is very potent, and while there can be no doubt that this estimate of a drug or procedure is in many cases the correct one, it is easy to become convinced of results which are not substantiated by facts. Standards which are impersonal and, therefore, impartial must on this account be employed ; and criteria on which stress may be laid are :

- (1) Average duration of primary pyrexia ;
- (2) Average period of hospitalisation ;
- (3) Percentage number of patients developing complications ; and
- (4) Percentage mortality.

Considered in conjunction, these provide a fair standard on which comparisons of treatment may be based, although alone neither is infallible. It is important also that such comparisons be made between patients whose infection is similar in severity and type, and for this reason appropriate grouping has been practised with regard both to full-time and post-abortum cases.

Before this investigation was initiated, a conservative routine of treatment had been followed, dependence being placed mainly on the gradual raising of the patient's resistance by the usual methods of hospitalisation as the chief agent in controlling the infection. The series includes 200 of such cases, and together with a few others similarly treated later, these form a number of controls, in the light of which the more specific and intensive methods may be judged and their true value assessed.

An analysis of each group of patients in respect of the various types of treatment, and using the standards above defined, has proved conclusively that there can be no rule or system laid down for the treatment of this disease. The experience of Group I. cases showed that on the whole these did not require any special intervention, and that a small initial dose of scarletinal anti-serum appeared to prevent any tendency towards generalised infection.

The patients of Group II. were found to benefit markedly from glycerin medication, but since these women were toxic to a greater or less extent, some method of general treatment was in addition necessary. For such a purpose scarletinal antiserum proved most effective. Metarsenobillon—the panacea of so many observers—was found valueless and unjustifiable as a routine measure, and vitamin A was demonstrated to be equally disappointing. Conservative treatment was for patients of this group entirely unsatisfactory.

In a consideration of Group III. cases, the main fact which emerged was the extreme difficulty of finding the best mode of treatment. The major problem lay in ascertaining that there was no pelvic effusion,

or that the infection was not of a virulent spreading type, requiring only a little movement of the uterus to provoke its advancement to the peritoneal surface. The conclusion arrived at, therefore, was that for patients of Group III. the general methods of treatment were in the main indicated. Statistically it appeared that the use of scarletinal antiserum was a justifiable procedure in most cases, and that repeated doses should be administered; whereas Metarsenobillon and vitamin A were uncertain in action and could not safely be recommended. Conservative treatment was on the whole useless.

The review of Group IV. patients demonstrated that any conservative routine was of no value at this stage of the disease. It appeared that a more specific method of treatment was essential if blood infection was to be controlled, and that rapidity of action was of primary importance. The statistics showed that Metarsenobillon had neither of these attributes, and that in established septicæmia this drug was valueless. It was suggested that in a few of the least virulent types of septicæmia, free administration of vitamin A might result in a gradual increase of resistance towards infection until finally the invading organisms were overcome. Few cases were, however, of this mild degree, and when found they gave much less cause for alarm than the highly-virulent infections which called for vigorous and insistent attack before they had so affected the essential systems as to determine a fatal issue. Specific serum of the scarletinal type proved to be of some value in a minority of such cases. In a small number of the less severe infections of this group, concurrent intra-uterine treatment was of some advantage, but in the more serious types local interference could not be too strongly deprecated, and this was specially true of the post-abortion series where the desire to explore the uterus was often very strong. The vast majority of Group IV. cases were not, however, materially affected by any of the methods here analysed. It is these women who constitute the real problem of treatment in puerperal sepsis.

#### CONCLUSIONS.

It is concluded finally, therefore, that methods of local treatment are restricted to patients in Groups I. and II., but that since 95 per cent. of the fatal cases are in Groups III. and IV., and if the mortality from puerperal fever is to be controlled by treatment, it is essential that the measures adopted for these latter patients should be along more specific lines. The use of a scarletinal antiserum—in default of an efficient specific serum for the streptococcus of puerperal sepsis—constitutes the only rational general method at present available. As applied to the less severe infections of the earlier groups, such a serum has in the main a prophylactic value; but the more serious infections demand its administration intravenously at the outset on repeated occasions, and in a dosage to be determined by the nature of the response obtained.

Sterilisation of the blood stream by metallic substances or other chemicals is a problem which has occupied the attention of many workers. These substances appear, however, to become fixed by the serum proteins, the blood cells, or the tissues, and are thus rendered

valueless. The border line between the effective and the poisonous dose must also of necessity be very narrow ; and any antiseptic which is to be of value must possess the double property of being toxic to the invading organisms and non-toxic to the blood and tissue cells—a power of discrimination well-nigh impossible. When such a substance is discovered, the problem of septicæmia will be on the way to solution, and in view of the excellent results obtained along similar lines in spirochætal conditions, there is still reason for hope that streptococcal infections may yet prove vulnerable. The extreme delicacy of the spirochæte and its comparative scarcity in the blood stream must, however, be remembered. The streptococcus is a powerful organism which grows readily in vitro, and in the blood of a septicæmic patient it is present in such numbers that any antiseptic which affects it must be both powerful and selective. For such a purpose organic arsenic and mercury appear not only valueless but harmful. In a disease so frequently fatal as puerperal septicæmia it may be justifiable to take some risks in treatment, and it is expedient to explore all avenues of helpfulness, but the bio-chemistry of the blood is still obscure, and it does not seem advisable to tamper with it in such a haphazard manner as the use of such antiseptic substances would imply.

With regard to vitamin A—the other suggested method of general treatment—this inquiry has proved conclusively that it possesses no real remedial properties which justify its administration. Puerperal sepsis is not a deficiency disease, and the wholesale consumption of vitamins has little to recommend it.

#### BIBLIOGRAPHY.

- <sup>1</sup> *British Medical Journal*, 1929, August 9th, p. 223.
- <sup>2</sup> Monthly Epidemiological Report of the Health Section of the Secretariat, Ninth Year, No. 7. Geneva, July 15th, 1930, p.
- <sup>3</sup> Report on Maternal Mortality in Aberdeen, 1918-1927, with Special Reference to Puerperal Sepsis, by Kinloch, Smith and Stephens.
  - (a) pp. 34, 35, 43.
  - (b) p. 9.
  - (c) p. 28.
- <sup>4</sup> Annual Report for Glasgow, 1929.
- <sup>5</sup> Reid, J., *The Medical Officer*, 1929.
- <sup>6</sup> *Causation and Source of Infection in Puerperal Fever*, by J. Smith, 1931, p. 1, *et seq.*
- <sup>7</sup> Lash, A. F., and Kaplan, B., 1925, *Journal American Medical Association*, 84, 1921.
- <sup>8</sup> Colebrook, L., 1930, *British Medical Journal*, i., 134.
- <sup>9</sup> Schwarz, O. H., and Deickman, W. J., 1927, *American Jour. Obstet. Gynec.*, 13, 467.
- <sup>10</sup> Hobbs, A. Remington, *Franco-British Medical Review*, iii., 12, p. 319.
- <sup>11</sup> Compton, A., *Lancet*, 1926, ii., 326.
- <sup>12</sup> Kyle, D., *British Medical Journal*, 1931, i., 425.
- <sup>13</sup> Annual Report M.A.B., *Lancet*, September, 1928, p. 33.
- <sup>14</sup> Cameron, S. J., and Thompson, H., 1931, *British Medical Journal*, i., p. 350.
- <sup>15</sup> Colebrook, L., *British Medical Journal* (Supplement), February 4th, 1928.
- <sup>16</sup> Delmas, P., *Bull. Soc. d'Obstet. et de Gynéc. de Paris*, 1928, p. 433.
- <sup>17</sup> Péry, J., *Jour. de Méd. de Bordeaux*, 1927, p. 383.
- <sup>18</sup> Mellanby, E., and Green, H. N., *British Medical Journal*, October 20th, 1928, p. 691.
- <sup>19</sup> Mellanby, E., and Green, H. N., *British Medical Journal*, 1929, June 1st, p. 984.

## SECTION IV.

## INFECTIOUS DISEASES.

The number of cases of the various infectious diseases registered during 1930, and the number treated in Local Authority Hospitals and other institutions, are given in the Appendix Table XVII.; the seasonal prevalence of each is shown in Table XIX., which gives the numbers registered during each month of the year.

For purposes of comparison, the rates for each disease per million of the population, along with the rates for the preceding four years, are given in Table XVIII. of the Appendix. The rates for the principal diseases which have been notifiable over a considerable period are summarised in the following table from 1913 onwards.

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED SINCE 1913.

YEAR.	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Croup.	Cerebro-spinal Fever.	Phthisis.	Non-Pulmonary Tuberculosis.	All Others.	TOTAL.
1913,	39	232	7	144	...	4,005	1,934	35	2,552	...	26,247	35,195
1914,	18	340	7	206	...	5,337	1,440	45	2,284	1,088*	21,675	32,440
1915,	9	248	5	175	...	5,973	1,257	167	2,169	1,375	25,389	36,667
1916,	17	158	8	178	...	3,719	1,220	131	2,285	1,270	17,001	25,987
1917,	1	82	4	148	...	1,634	1,146	75	2,435	1,433	27,005	33,963
1918,	49	128	12	151	1	1,193	1,379	67	2,258	1,273	16,045	22,556
1919,	30	103	8	163	5	2,443	1,626	72	1,834	1,083	21,359	28,726
1920,	8	204	13	267	477	3,378	1,809	76	2,009	1,063	25,509	34,813
1921,	6	100	7	299	19	3,272	1,727	56	1,902	1,061	23,965	32,414
1922,	18	79	6	274	...	3,234	1,572	62	1,818	977	31,633	39,674
1923,	2	117	20	259	...	3,321	1,645	59	1,606	1,149	25,805	33,984
1924,	...	76	18	222	2	2,965	1,768	61	1,703	1,137	30,881	38,835
1925,	...	41	8	279	...	3,551	1,617	58	1,490	1,039	22,399	30,430
1926,†	7	92	4	283	...	4,350	2,130	60	1,646	945	31,865	41,385
1927,	...	136	4	254	...	3,777	2,785	72	1,489	1,010	32,021	41,550
1928,	...	53	4	379	...	2,971	2,414	94	1,582	1,016	29,368	37,880
1929,	...	78	4	474	20	3,079	1,944	186	1,656	911	28,838	37,192
1930,	2	45	4	549	3	4,555	2,407	136	1,549	932	32,085	42,297

\* Non-pulmonary tuberculosis made compulsorily notifiable, July, 1914.

† Rates are for extended city.

After a period of over three years, two cases of typhus fever occurred in the City; in fact, but for the outbreak in 1926, the City would have had a clear record since 1923. Enteric fever again appears to have reached a minimum, with a rate of only 45 per million, compared with 78 in 1929. Three cases of smallpox were removed to hospital from a vessel which arrived here from Eastern ports. There were no other cases in the city.



The incidence of scarlet fever, with a rate of 4,555 per million of the population, has not been exceeded since 1915. The increase since 1929 has been rapid, as the rate for that year was only 3,079. Diphtheria was also more prevalent, the rate of 2,407 being approximately 25 per cent. greater than that of the preceding year. Cerebro-spinal fever, which has been increasingly prevalent since 1925, now shows a definite decrease, with a rate of 136 in 1930, against 186 in 1929. It is now, however, 14-15 years since the last outbreak of this disease in the city, when the incidence assumed somewhat similar proportions.

Tuberculous diseases, which show a slight reduction in the pulmonary form, and a slight increase in non-pulmonary forms, will be dealt with in the next section of this Report.

The column "All others" now embraces so many diseases, including pneumonia, measles and whooping-cough, that the total rate is only of interest as indicating the volume of cases now registered. The individual diseases are dealt with in detail throughout this section.

*Administration of Infectious Disease in Schools.*—Careful consideration has been given to the rules governing exclusion of patients and contacts from school attendance. The regulations in force have been revised and brought more into line with modern knowledge. The subjoined code has been agreed upon in consultation with the Education Department, and is now in force:—

REGULATIONS REGARDING THE EXCLUSION FROM SCHOOL OF  
CHILDREN IN WHOSE HOUSES INFECTIOUS DISEASE  
HAS OCCURRED.

	I.	II.	III.
Diseases (*compulsorily notifiable diseases).	When the patient has been removed to hospital, <i>thereafter</i> the following periods of exclusion of "contacts" shall be observed:—	When the patient is treated at home the following periods of exclusion of "contacts" shall be observed:—	The average period during which the patient is infectious is as follows:— (For information only. "Clearance lines" are issued for notifiable diseases).
Measles, ...	21 days in each case. "Contacts" above the Infant Dept. who have had the disease may return to school after the removal of the case.	Until the patient has been declared free from infection. "Contacts" above the Infant Dept. who have had the disease and who do not live or sleep in the same room as the patient are not excluded.	2 weeks from the appearance of the rash.
Whooping-Cough,			4 weeks from the beginning of the "whoop."
†Chickenpox, ...			3 weeks or until every crust has separated.
German Measles			1 week.
*Scarlet Fever, ...	7 days.	7 days after disin- fection.	6 weeks (see Note I.).



*Smallpox, ...	21 days in each case, or until declared free from infection by Medical Officer on bacteriological examination.	21 days after disinfection, or until declared free from infection by Medical Officer on bacteriological examination.	6 weeks or until every crust has separated.
*Typhus Fever, ...			3 weeks.
*Diphtheria(including Membranous Croup), ...			4 weeks (see note II.).
*Cerebro-Spinal Fever			6 weeks.
Mumps, ...	"Contacts" are not excluded.		4 weeks from beginning of attack and 1 week after subsidence of swellings.
*Erysipelas, ...	"Contacts" are not excluded.		(Not stated.)
*Influenza, ...			
*Tuberculosis, ...	21 days in each case or until declared free from infection by Medical Officer on bacteriological examination.	Until the patient has been declared free from infection, thereafter contacts may return to school provided they are kept under supervision in order that any early signs of the disease may be detected.	6 weeks, due regard being paid to the occurrence of "carrier" cases.
*Typhoid Fever, ...			(Do.)
*Paratyphoid Fever, ...			Variable—depends on type.
*Dysentery, ...			6 weeks.
*Poliomyelitis (Acute),...			6 weeks.
*Polioencephalitis (Acute),...	21 days in each case.		6 weeks.
*Encephalitis Lethargica (Acute),			6 weeks.
*Trachoma, ...			"Contacts" are excluded until declared free from infection by Medical Officer.

NOTE I.—Scarlet Fever—The presence of sore throat or discharge from ear or nose, or any eczematous condition may prolong the period. No convalescent child should return to school until 14 days after disinfection or dismissal from hospital.

NOTE II.—Diphtheria (including Membranous Croup)—Provided there is no sore throat and no discharge from throat, nose, ears or eyes, and that throat and nose swabs have been negative.

† Compulsorily notifiable until 31st December, 1931.

### DISEASES FORMERLY CALLED "PRINCIPAL ZYMOTIC DISEASES."

The death-rates for several periods have been:—

1881-90, 3.600 per 1,000 living.	1926, 1.257 per 1,000 living.
1891-1900, 3.282	*1927, 1.141
1901-1905, 2.660	1928, 1.232
1906-1910, 2.450	1929, .874
1911-1915, 2.424	1930, .984
1916-1920, 1.607	
1921-1925, 1.303	

\* Diarrhoea over 2 years excluded.

In this comparison only those infectious diseases that have been notifiable for most of the period given are included.

## SMALLPOX AND VACCINATION.

There were three cases of smallpox removed to hospital, subsequent to the arrival of a ship from the East. A full report on this occurrence will be found in Section VII. dealing with the work of the Port Local Authority.

*Vaccination.*—The total number of infants vaccinated at clinics held at the Child Welfare Centres in the various districts of the City was 1,987 compared with 2,307 in 1929.

The following table shows the numbers of children vaccinated at the various Centres during the past three years:—

STATEMENT SHOWING NUMBER OF INFANTS VACCINATED AT THE CHILD WELFARE CONSULTATIONS DURING THE YEARS 1928–1930.

Centre.	1928.	1929.	1930.
Public Health Office, ...	408	444	261
Garngad, ... ..	88	55	12
Port Street, ... ..	131	97	98
Maryhill, ... ..	189	190	153
Govan Town Hall, ...	128	100	108
Adelphi Street, ... ..	258	244	228
Partick, ... ..	123	116	143
Weir Street, ... ..	118	125	89
Bridgeton, ... ..	725	602	521
Shettleston, ... ..	246	207	254
Cowcaddens, ... ..	19	10	—
Elder Hospital, ... ..	82	102	88
Yoker, ... ..	—	—	—
Springburn, ... ..	24	15	32
	<u>2,539</u>	<u>2,307</u>	<u>1,987</u>

## VACCINATION (SCOTLAND) ACT, 1907.

The following shows the number of declarations of conscientious objection to vaccination made each year since the Act came into operation:—

1907–10 (annual average),	2,119	1926 ... ..	5,485
1911–15                   ,,	5,922	1927 ... ..	5,254
1916–20                   ,,	6,182	1928 ... ..	5,560
1921–25                   ,,	5,318	1929 ... ..	5,949
1930 ... ..	...	...	6,385

The number of conscientious objections to vaccination made during the year was 6,385, which is equal to 27 per cent. of the total births registered. This compares with 26 and 24, the respective percentages for the years 1929 and 1928. Declarations of conscientious objection were made in respect of nearly half the births in Fairfield, where the percentage of objections was 48. Other high percentages

were 45 in Govan and 39 in Springburn. The lowest number of exemptions occurred in Kelvinside, with 8 per cent., followed by 18 per cent. in Park. Particulars of the other wards are contained in Appendix Table XXII.

The following abridged table indicates the percentages before the Conscientious Objection Act came into operation and for the year 1914, when the lowest percentage of successful vaccinations was reached, namely 51·7. Within recent years there has again been a tendency towards reduction.

TABLE SHOWING RESULTS OF PRIMARY VACCINATION OF CHILDREN BORN DURING SEVERAL YEARS.

(From the Detailed Annual Reports of the Registrar-General.)

Year.	Successfully vaccinated. Per cent.	Insusceptible of vaccine disease. Per cent.	Died before vaccination. Per cent.	Conscientious objection to vaccination. Per cent.	Vaccination postponed. Per cent.	Unaccounted for. Per cent.
1906	82·9	0·5	10·6	0·2	0·8	5·0
*	*	*	*	*	*	*
1914	51·7	0·9	12·1	25·1	1·8	8·4
*	*	*	*	*	*	*
1926	61·7	1·8	8·1	22·8	1·8	3·8
1927	61·9	1·5	8·2	22·7	1·8	3·8
1928	59·9	1·8	8·6	22·9	2·3	4·5
1929	53·9	3·7	8·1	27·1	1·6	5·6

### TYPHUS FEVER.

In 1930 typhus again appeared in Glasgow—two cases were notified in May. The disease had been absent since 1926, when a small outbreak of eight cases occurred. The two cases, which presented certain features of epidemiological interest, were described by Dr. C. M. Smith at some length in the *Glasgow Medical Journal*, September, 1930.

*Case 1.*—A. B., 45 years, was an ambulance attendant who removed cases to various hospitals in the City, but principally to one large institution containing a general hospital of 600 beds. He sickened on 4th May, and six days later was admitted to hospital with a diagnosis of lobar pneumonia. A rash which was appearing on admission was well developed in forty-eight hours, and recognised as typhus. The illness terminated fatally on 14th May.

*Case 2.*—X. Y., 50 years, was an inmate of the institution to which the first patient had acted as ambulance driver. He took ill on 8th May, but did not report sick until a week later, when a very definite typhus rash had appeared. A remarkable feature of this case was that the patient had kept at work up to the date of appearance of the rash. It is most unusual for a patient to remain at work for five

or six days after the onset. This man was employed at the incinerator of the institution, where the dressings, garbage, verminous clothing, &c., were burned.

It was established that during the preceding six months only one bundle of verminous clothing had been burned at the incinerator. This clothing belonged to an elderly mendicant, M. N., 69 years, who was frequently in and out of the institution. He had been admitted there on 24th April—the ambulance attendant (A. B.) who had brought him in being the first case, sickening eleven days later, and the person who burned his clothing (X. Y.) being the second case, sickening fifteen days later.

As M. N. formed such a close epidemiological link between these two cases, the natural inference was that he had been admitted with typhus fever. His clothing was heavily lice infested. The disease, however, found on admission was senile pulmonary tuberculosis, without any suggestion of typhus. The Weil Felix reaction was negative. The facts strongly suggest that this elderly patient, M. N., was harbouring typhus-infected lice on admission. Between March and June, 1930, there were reported 25 cases of typhus fever in Ireland. He had been born in Ireland, where he had spent the first twenty years of his life, and it is conceivable that he may, by an attack of typhus in that country, have been immune. His clothes were so highly infested with lice that permission to have them burned had to be obtained. As far as could be ascertained, however, this man had had no connection with Ireland, or with any known source of infection.

This experience is in common with previous incidents regarding outbreaks of typhus fever. It appears to arise from nowhere. Is it endemic or is it imported at irregular and infrequent intervals from Ireland? Those who hold that the infection is endemic argue that the virus is maintained in circulation by mild abortive attacks of the disease in children in whom diagnosis is notoriously difficult. When an adult is affected and a typical picture of the disease appears, the case may be missed. In accordance with this view, typhus is endemic among children of poorer classes, the notified cases representing only a small proportion of the actual incidence. Against this view it is unlikely that an attack of typhus in an adult will be missed, as the disease is usually severe, the rash well marked, and the case invariably sent to hospital. A second possibility involves transmission of infection from generation to generation of the louse, a conception responsible for the idea of typhus-infected houses. Against this hypothesis is the negative recent experimental evidence that the virus is transmitted from the louse to the nit. A possible explanation of the intermittent appearance of typhus fever in Glasgow is that the disease is imported from Ireland, where it is to some extent endemic. The first case or two that arises as a result of contact with imported infection might easily, especially if confined to children, be atypical and accordingly unrecognised, so that by the time the disease is discovered the "trail" has been lost.

## ENTERIC INFECTION.

During 1930 there occurred 140 cases of enteric infection. The following table shows the number notified and the number verified:—

	Enteric Fever.	Para- typhoid B.	Total.
Cases notified ... ..	131	60	191
Cases verified ... ..	49	91	140

No cases of B paratyphosus A disease were registered.

If the year 1927, when there was a milk outbreak of paratyphosus B infection, be excepted, this incidence is the highest reported since the war years. No extensive grouping of cases occurred in connection with milk, food, or any institution. Apart from five cases in one ward of a children's hospital and five cases in one family in the Eastern Division, there was no grouping of cases: there was no reason to suspect that milk was responsible for the spread of the disease.

The increased incidence is only to a slight extent accounted for by cases considered to have been infected outside the city. These total 21, of which four were from abroad, two from England, seven from Lanarkshire, and the remainder from other parts of Scotland. A number of these were admitted to the general hospitals of the city as conditions other than enteric fever. In Lanarkshire there was a mild epidemic of paratyphosus B infection, which accounts for the fact that seven cases were sent to Glasgow hospitals.

*Type of Case.*—The cases, on the whole, were of a mild type. There were ten deaths, eight from B typhosus and two from paratyphosus B, giving a case mortality rate of seven per cent. It will be observed, however, that the case mortality rate for B typhosus infection is 16·3 per cent. (eight deaths from 49 cases), compared with a rate of 2·2 per cent. for B paratyphosus B disease (two deaths from 91 cases).

*Geographical Distribution.*—The south side of the City was less affected than the north, *i.e.*, only 31 cases (12 in the South-Eastern and 19 in the South-Western Division) occurred in the south side as contrasted with 109 on the north side. North of the river the three Public Health Divisions were fairly equally affected. In the Northern Division there were 40 cases; in the Central 36; and in the Eastern 33. The highest number of cases in one ward, 11, occurred in Whitevale Ward. In Dalmarnock Ward there were 10 cases, and Anderston and Whiteinch Wards each had eight cases. In five wards no cases were registered.

*Seasonal Distribution.*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
B Typhosus, 2	8	6	5	1	4	3	6	8	5	1	...		49
Para-typhoid B, 2	...	7	2	4	19	20	15	9	1	8	4		91
	4	8	13	7	5	23	23	21	17	6	9	4	140
	1st quarter=			2nd quarter=			3rd quarter=			4th quarter=			
	25			35			61			19			



From the table it is seen that the disease has maintained its normal seasonal distribution, the heaviest incidence falling in the third quarter of the year.

*Examination of Contacts.*—The following table shows the number of cases in connection with which bacteriological examinations of contacts were made, the total number of contacts, the number of contacts examined, and the number found positive:—

	Enteric.	Para. B.	Total.
Number of verified cases, ... ..	49	91	140
Number of cases in connection with which urine and faeces of contacts were examined, ... ..	21	25	46
Number of contacts +10 years, ... ..	88	117	205
Number of contacts —10 years, ... ..	22	21	43
Total number of contacts, ... ..	110	138	248
Number of contacts examined, urine and faeces, ... ..	93	85	178
Number found positive, ... ..	6	7	13

Of the thirteen contacts found positive, six were regarded as mild secondary cases brought to light on examination; six were regarded as temporary carriers, that is, there were no symptoms, and negative bacteriological results were obtained within, as a rule, about six weeks of the first positive result; the remaining contact reported positive was regarded as a chronic carrier.

An additional secondary case was detected on examination for Widal Reaction of the contacts. The examination of specimens of serum in the contacts for Widal Reaction has to some extent taken the place of bacteriological examination.

The following table shows the number of Widal examinations performed:—

	Enteric Fever.	Para. A.	Para. B.	Total.
Contacts examined for Widal Reaction,	9	—	62	71
Contacts with <i>significant</i> positive Widal Reaction, ... ..	—	—	2	2
Contacts with positive Widal in whom urine or faeces was found positive,	—	—	1	1

Of the 13 contacts reported positive, nine were found in one division, in which from practically every contact specimens were bacteriologically examined.

*Carriers.*—There are at present four known carriers in the City; males of 39 and 30 years and females of 36 and 76 years. One of the carriers, a woman of 36 years, was discovered in December, 1930, on routine examination of contacts, and was still positive when re-examined three months later: she had enteric in 1920. The other female carrier was discovered three years ago: but it is unknown whether she is positive or not, as she refuses to give specimens for examination. The third carrier, a man of 30 years, has been positive for three years; and the fourth carrier, a man of 39 years, had paratyphus B infection in July, 1930, and when examined in

February, 1931, a positive result was reported. The last named was the only carrier of *B paratyphosus B*, the other three being carriers of *B typhosus*.

*Carriers in Hawkhead Mental Hospital.*—At the end of December, 1930, there were 13 carriers in Hawkhead Mental Hospital, and there were also 46 inmates whose serum gave a positive reaction. These patients have been examined at least six or seven times for the presence of enteric fever organisms with a negative result. The blood of all patients admitted to the institution is as a routine subjected to a Widal test, and those giving a positive reaction are segregated until repeated examinations of urine and faeces have been made. Since these precautions were first adopted early in 1927, no case of enteric fever has occurred in the institution.

*Multiple Cases in the same House.*—There were eleven instances in which more than one case of enteric disease occurred in the same house. In one instance there were five cases among the members of one family, in four instances three cases in one family, and in six instances two cases.

Seven cases of *B typhosus* infection occurred over a period of four months, November, 1929, to February, 1930, in two adjacent tenements in the South-Western Division. The first three cases were in one family, in which the primary case was ill for 16 days before the nature of the infection was detected and the case isolated. Thereafter two cases occurred in the same tenement and two in the adjacent tenement. In the latter four cases a history of direct contact with the first cases could be obtained. Bacteriological examination of 44 contacts in both tenements failed to discover a carrier. It was considered that the association between the cases was adequately explained by direct case-to-case infection. Further factors favouring the spread of infection were the suppression of information with regard to illness, in some cases leading to delay in removal of the case to hospital, and a low general standard of hygiene.

*Institutional Cases.*—There were 45 cases registered from institutions. In 21 it was reckoned that they were infected before admission, while in 14 they were probably infected after admission. Ten of the institutional cases were nurses. In the case of six nurses contact with definitely known cases of enteric could be excluded, two more were thought to have been infected from a suspected case, and in the remaining two the information available was insufficient to exclude the possibility of infection from other cases.

*Source of Infection.*—Apart from secondary cases in the same family, five cases in the ward of a children's hospital, three cases in a tenement, and two nurses, the source of infection was undetected. This means that in only 31 cases was the source found.

What has been the source of infection in the other cases? The most probable hypothesis is that the infection is spread by mild abortive cases who are found negative on bacteriological examination, possibly because by the time the secondary cases are declared and examination of contacts performed it is too late to recover the organism from the original case. Against this, however, must be placed the fact that although bacteriological examination of the original case might be negative, it is reasonable to expect a positive Widal reaction, and of 72 contacts examined for Widal reaction only two were reported positive, so that full knowledge of the mode of spread is not yet available.

The following table of death-rates since 1881 shows the marked decline which is taking place in this affection:—

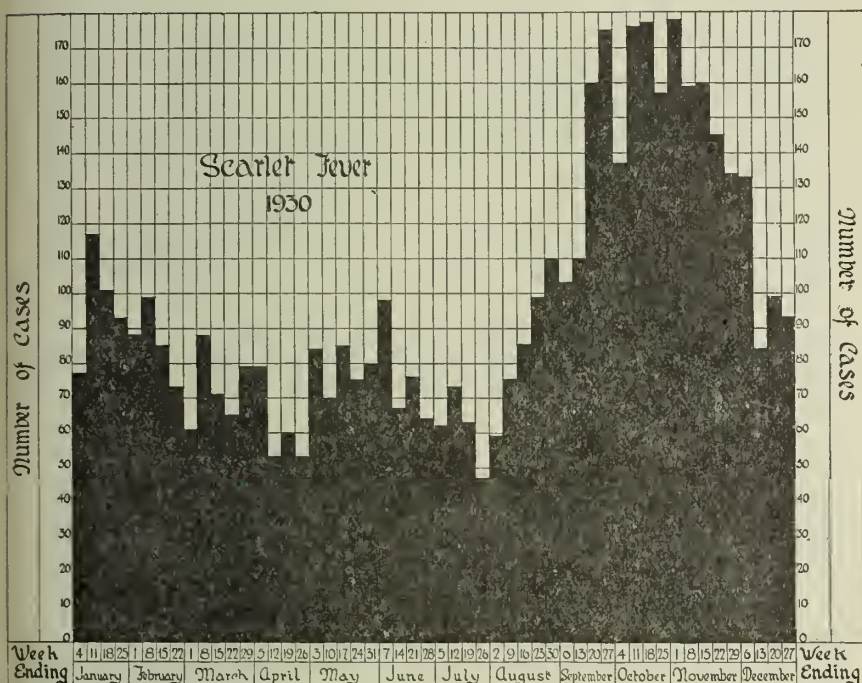
1881-90,	... .230 per 1,000	1926,	... .015 per 1,000
1891-1900,	... .215     ,,	1927,	... .009     ,,
1901-10,	... .127     ,,	1928,	... .009     ,,
1911-15,	... .058     ,,	1929,	... .006     ,,
1916-20,	... .023     ,,	1930,	... .009     ,,
1921-25,	... .058     ,,		

#### SCARLET FEVER.

Scarlet fever in 1930 was characterised by an autumnal epidemic of fairly extensive proportions. The number of verified cases registered during the year was 4,960, of which 2,745 occurred in the last five months. The case rate per million for the year was 4,556, which is the highest rate recorded since 1915. From a chart which has been prepared to show the behaviour of scarlet fever since notification figures became available in 1891, it is seen that 1930 was a year of epidemic prevalence, the previous years similarly characterised being 1892, 1899, 1909, and 1915. Between the epidemic years there have been intervals of 7, 10, 6 and 15 years. Notification figures are the most reliable data from which to describe the history of scarlet fever, because from mortality returns (the only statistics available prior to 1891) the incidence cannot be reckoned on account of considerable variations in case mortality. Since the quinquennium 1891-1895 the case mortality rate has fallen from six per cent. to 0.8 per cent. The progressive loss in the severity of the infection is better demonstrated by the death rate per million, which since 1855-1859 has fallen from 1,301 to 37 in 1930.

*Severity of the Epidemic.*—Extreme mildness of the epidemic is revealed by the small number of deaths, only 15 out of 2,745 cases, a case mortality rate of 0.5 per cent. As the case mortality rate for the first seven months of the year was 1.1 per cent. (2,215 cases and 26 deaths) the rather striking factor is seen that during epidemic prevalence there was fortunately an increase in the mildness of the infection.

SCARLET FEVER :— CHART SHOWING WEEKLY INCIDENCE IN  
GLASGOW DURING 1930.



*Age Distribution.*—The age distribution of all cases of scarlet fever in 1930 was as follows :—

	-1 yr.	-2 yrs.	-5 yrs.	-10 yrs.	-15 yrs.	+15 yrs.	Total.
No. of Cases, ...	45	186	1,141	2,124	729	735	4,960
Percentage of Cases,	0.9	3.7	23.0	42.8	14.6	14.8	100.0

It is to be observed that as usual the greatest number of cases, 42.8 per cent., are in the second five years of life.

The age distribution for 1930, when compared with that for the period 1914–1925, is found to be practically the same. The proportion of cases of school age, which from 1914–1925 fluctuated between 53 and 64 per cent., was 57.8 per cent. Among pre-school children of 1–5 years the proportion was 26.8 per cent., which is a little higher than any of the corresponding rates for 1914–25, when variations from 19.4 to 26.4 were recorded. The proportion of infants under one year and of persons over 15 years affected was 0.9 and 14 per cent. respectively, both figures being within what, for Glasgow, have been normal limits.

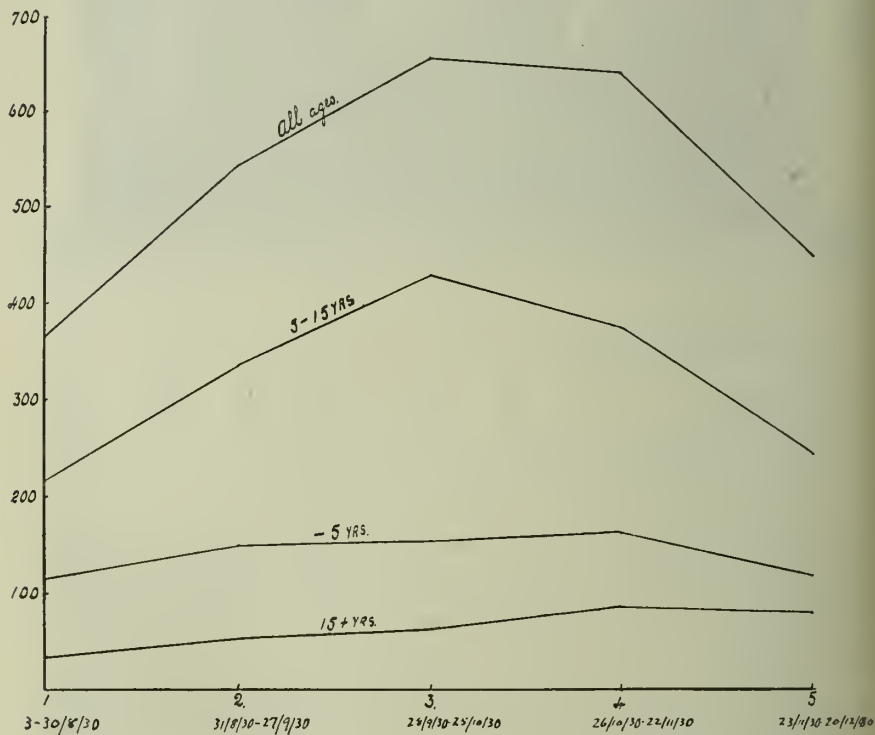
The age distribution in each four-weekly period from August to December was noted to ascertain whether as the epidemic advanced the age distribution altered. From a chart prepared to show the



incidence in each age group—5 years, 5–15 years, +15 years—it is seen that after the peak four-weekly period in October is passed, the incidence in the 5–15 age group declines, but in the +15 age group the incidence increases slightly during the following period (November) and is maintained until the fifth four-weekly period (December). In the —5 age group, after the peak is passed in the third four-weekly period, the number of cases continues to grow until the fourth-weekly period (November), after which it declines. A comparison with other epidemics would require to be drawn before a definite statement could be made, but there does appear to be a suggestion that after the period of maximum prevalence the less susceptible age groups may show a relatively increased incidence for four or more weeks. If this be so, it is what might be expected: the less susceptible the unit of population the later in the epidemic is it affected.

### SCARLET FEVER (GLASGOW).

ALL AGES AND THREE PRINCIPAL AGE GROUPS IN FOUR WEEKLY PERIODS,  
AUGUST–DECEMBER 1930.



*Seasonal Distribution.*—Dr. Chalmers, former Medical Officer of Health, noted that when observed for a series of years a continuous increase in the number of cases of scarlet fever begins towards the



third week of July, reaches the maximum about the second week of October, and thereafter declines until February, when it falls below the mean of the year, and remains at varying intervals below it until the end of August. In 1930, it was not until the third week in August that the number of cases rose above the weekly mean. Thereafter the epidemic gradually progressed until, in the first week of November, 178 cases were notified—the highest figure reached for ten years. From that point onward the infection gradually receded, but it was only in the last week of the year that the number of cases fell just below the weekly average.

#### SECONDARY AND RETURN CASES.

*Secondary Cases.*—During the autumn prevalence special attention was paid to the secondary and return cases. From August to December inclusive there were admitted to hospital 2,583 patients in association with whom 163 secondary cases arose (*i.e.*, cases sickening in the same house within fourteen days after removal of the first case). A total of 217 patients treated at home during the same period was followed by 13 secondary cases, or 6 per cent., a figure which compares with 9 per cent. for hospital cases. Though the number of home cases is small, the rate for secondary cases is actually less when the patient is treated at home. In the absence, however, of information as to the number of contacts exposed to risk of infection, their age distribution, susceptibility to the disease, and degree of closeness of association with the infecting case, it is impossible to make any statement based on the comparison of these rates. A comparison cannot be held to justify a policy of home treatment, if the data enumerated relative to contacts of cases left at home be not available.

The age distribution of the 163 secondary cases in association with hospital patients was:—

	Cases.	Per cent.
—5 years, ... ..	70	43
—15 years, ... ..	77	47
+15 years, ... ..	16	10

The differences between these figures and the age distribution of scarlet fever for 1930, namely, under 5 years, 27·7 per cent., 5–15 years, 57·8, over 15 years, 14 per cent., are fairly substantial, and might be said to suggest that once infection has entered the family there is a greater chance of the children under 5 years being affected compared with normal circumstances.

Most of the secondary cases, 113 (69 per cent.), fell ill within four days of the removal of the first case: this is what is to be expected, as the secondary case is infected before the primary case is recognised and isolated. To account for the 27 patients who sickened 7–14 days after the removal of the first case, it is necessary to assume the existence in most instances of a missed or abortive attack in another member of the family acting as a link in the chain of infection.

*Return Cases.*—As regards return cases, there were for the whole year 122 cases, or 2·4 per cent. of the numbers dismissed from hospital, a figure which has altered little in the last ten years. From August to December inclusive during the epidemic, there were 73 return cases, or 2·9 per cent. That there should be any return cases at all is regrettable, but the meticulous supervision of patients before dismissal and the fact that the rate remains fairly constant over a considerable period of years indicate that we are dealing with a biological feature of the disease which has so far eluded control. When a patient is dismissed from hospital in whom, in spite of energetic treatment and a prolonged isolation, discharges have continued, the parents are instructed in methods to prevent the spread of infection, and in such instances the occurrence of secondary cases in the same house or tenement is almost unknown. The cases to be incriminated are those who on dismissal are passed as “clean” but who within a few days of returning home develop an infective discharge; as noted by Dr. A. K. Chalmers it is probably a question of “recurrence of infectivity.”

It is sometimes alleged that this modern practice of dismissing “clean” cases from hospital at the end of four weeks is responsible for a certain proportion of return cases. In this connection the following table presents several features of interest.

#### SCARLET FEVER—AUGUST 1ST—DECEMBER 31ST. 1930.

##### *Comparing Rate of Return Cases with Duration of Stay in Hospital.*

Period of Residence in Hospital.	No. of Cases Dismissed Well.	No. of Return Cases.	Return Case Rate.
Less than Four Weeks, ...	240	3	1·25
Four to Five Weeks, ...	879	30	3·4
Five to Six Weeks, ...	596	23	3·9
Six to Seven Weeks, ...	247	8	3·2
Seven to Eight Weeks, ...	157	4	2·5
Over Eight Weeks, ...	390	5	1·3
Total, ...	2,509	73	2·9

The first point to be noted is that the return rate does not diminish, as might be expected, with increase of stay in hospital. Why should the group of cases who are kept for less than four weeks be associated with the smallest return case type? Is it because this group will include the very mildest type of scarlatinal infection? Is it because they have not been sufficiently long in hospital to be inoculated with a streptococcal strain, other than that with which they were admitted? It has been suggested that the latter event is possible, and may be responsible for infection of home contacts after dismissal. If this factor were of importance in the causation of return cases it might be expected that the return case rate would increase with duration of residence in hospital; against this is the fact that the longer a patient

is isolated the less the chance of infective discharge recurring after dismissal.

*Home Treatment.*—Although every encouragement was given in the home treatment of scarlet fever where conditions were at all suitable, only 319 patients were kept at home, that is, 93 per cent. of all cases were removed to hospital. The proportion of scarlet fever cases admitted to hospital has not varied in the last three years, showing that there are very few houses in Glasgow in which the conditions requisite for the home treatment of this disease are to be found. The requirements for home treatment were—(a) a separate apartment for the patient; (b) sanitary convenience situated inside the house; and (c) contacts not to be engaged in handling food or milk, or attending children. Other contacts of school age in the affected house have to be boarded out with friends or, failing this, have to be excluded from school until a week after the case has been declared free from infection. It is probably this regulation regarding school exclusion of contacts which to a large degree, is responsible for maintaining an extensive hospitalisation of scarlet fever. Indeed during the autumn epidemic 800 beds were allocated for the disease, an unusually large number.

The death-rate from this disease since 1881 is shown in the following table:—

1881-90,	...	·490 per 1,000	1926,	...	·083 per 1,000
1891-1900,	...	·295 „	1927,	...	·040 „
1901-10,	...	·116 „	1928,	...	·031 „
1911-15,	...	·163 „	1929,	...	·037 „
1916-20,	...	·060 „	1930,	...	·038 „
1921-25,	...	·065 „			

The rates of mortality since 1927, when serum treatment was begun, compare favourably with the rates obtaining during previous years.

*Epidemic Sore Throat complicated by Nephritis.*—In February, 1930, the Department was requested to investigate a familial outbreak of sore throat in which some of the cases were complicated by nephritis. The family consisted of father (a professional man), mother, five children whose ages ranged from 1 2/12 to 16 years, and two maids. Of seven members of the household who were affected by sore throat, three later suffered from nephritis. The sore throat, with one exception, was of a very mild type, causing practically no constitutional disturbance: the complicating nephritis, on the other hand, was severe, indeed in the case of the father it proved fatal.

The facts of the outbreak can be summarised in tabular form, viz. :—

Patient.	Date of Sickening with Sore Throat.	Sore Throat, Mild or Severe.	Date of Nephritis.	Date of Swab for Haemolytic Streptococci and Result.
1. Mother (about 40), ...	31/1/30	Trivial	...	28/2/30, positive.
2. 1st Maid (28), ...	31/1/30	Trivial	...	28/2/30, positive.
3. 2nd Maid (26 ?), ...	31/1/30	Trivial	...	Not swabbed; left house 31/1/31.
4. Daughter (7), ...	7/2/30	Moderately severe	18/2/30	28/2/30, positive.
5. Son (16), ...	13/2/30	Mild	25/2/30	28/2/30, positive.
6. Son (13), ...	14/2/30	Mild	...	6/3/30, positive.
7. Father (about 42), ...	17/2/30	Moderate, with little exudate and fever.	26/2/30	28/2/30, negative.

The two youngest children, boys of 3 and 1 2/12 years, who escaped the infection, were also swabbed for haemolytic streptococci and reported negative.

*Diagnosis.*—Scarlet fever—By the absence of rash and desquamation scarlet fever could be confidently excluded.

Diphtheria—Clinically the cases did not resemble diphtheria. The only patient in whom the throat at all resembled diphtheria was the daughter of 7 years, who was swabbed for diphtheria with negative result.

While nephritis is recognised to be caused occasionally by sore throat, the association of three cases in one family is sufficiently uncommon to warrant description.

## DIPHTHERIA.

The incidence of diphtheria and membranous croup had been decreasing since 1927 until 1929, when the rate per million of the population was 1,944. During 1930, however, the incidence increased to 2,407. The rates during the past five years have been much heavier than has been the case since pre-war days. The total number of cases registered was 1,259, of which all but 73 were treated in hospital, the percentage treated in hospital being 97 per cent., compared with 98 per cent. in the preceding year.

The highest incidence of the diseases occurred in the South-Western Division of the City, 151 cases being recorded in Govan, 148 in Fairfield, and 119 in Kingston. Other wards which were heavily affected were Parkhead, Dalmarnock, and Calton, in the east-end, all with large populations of children, while over 100 cases were recorded in Ruchill and Whiteinch, to which a considerable number of families have transferred recently, as houses became available in housing schemes in these districts. Fully 80 per cent. of the cases occurred among children under 15 years of age, the males predominating at the very young ages, and the females from 5 years of age upwards.



The monthly prevalence is given in Appendix Table XIX., and as usual the seasonal prevalence begins after the school summer holiday period, and rises to a maximum by the end of October or the beginning of November. Nearly half the cases occurred in the last four months of the year.

Deaths to the number of 145 were registered during 1930, representing a morbidity rate of 5.5 per cent. of the cases, compared with 6.4 in 1929.

The following table shows the death-rates per 1,000 living since 1881 :—

1881-1890,	·280	per 1,000 living.	1921-25,	·123	per 1,000 living.
1891-1900,	·231	„	1926,	·121	„
1901-1905,	·134	„	1927,	·104	„
1906-1910,	·205	„	1928,	·128	„
1911-1915,	·187	„	1929,	·124	„
1916-1920,	·143	„	1930,	·133	„

### ERYSIPELAS.

Little importance now attaches to erysipelas except for its possible coincidence with the prevalence of scarlet fever, because of the probable causation of both diseases by variants of the streptococcal organism. Reference to Table XVIII. in the Appendix shows that during the past three years erysipelas and scarlet fever have increased in incidence together, the increase in erysipelas being more definite to begin with, and as is shown in Table XIX. the seasonal increase took place in the autumn. The advent of colder weather during the winter months usually causes a recurrence of the increase in erysipelas. Quite apart from this, there is also the association of this disease with injuries and bruises contracted during the New Year festivities.

Erysipelas is also of importance because of the fact that of 1,259 cases registered, more than 50 per cent. had to be removed to hospital, thus occupying beds which are required for more acute infections. The incidence of the disease was heavier among females, and reached a maximum in both sexes around 50 years of age.

### DISEASES OF THE CENTRAL NERVOUS SYSTEM.

*Cerebro Spinal Fever.*—The total number of cases registered in 1930 was 148, which compared with 203 in 1929, when the disease was more prevalent than it had been since the outbreak in 1915-16. The disease has been increasing since 1926 and reached a maximum in 1929. A special memorandum on this affection was included in the report for that year.

There was no pronounced prevalence in any one ward in 1930, as was the case in 1929, when Calton, Exchange and Kingston were relatively heavily affected. In 1930 the highest number of cases in any one ward was 11, in Govan.



*Encephalitis Lethargica*.—There were 32 cases registered as encephalitis lethargica during the year, of which 6 were removed to fever hospitals and 6 to other general institutions. In 1929 there were 45 cases. Of the total cases occurring in 1930, 14 were recorded in the South-Western Division of the City, and of these 5 occurred in Kinning Park and 5 in the contiguous ward of Govan. The number of deaths registered from the disease, 27, took place principally among patients suffering from the late results of infection received during the epidemic year, 1923-24.

#### ENCEPHALITIS LETHARGICA—GENERAL REVIEW OF POSITION.

There still exists in the City a considerable number of patients suffering from the late results of encephalitis lethargica, the great majority of whom received their infection during the epidemic of 1923-24. It is customary to review the position of these patients from year to year, and the following account of the incidence of post-encephalitic conditions along with the administrative problems involved has been prepared by Dr. Wm. C. Gunn:—

(1) *Incidence, &c.*—The most recent survey (at the end of 1930) of the incidence of post-encephalitis lethargica in the city shows that there are still 475 such cases, of whom 276 are males and 199 females. Most of these cases originated from the epidemic of 1923-24. Between 1918 and 1926 inclusive, 909 cases were notified to this Department, and the following analysis made by Dr. Andrew Davidson, a former member of the staff, shows the position at the end of 1926:—

Patients at home,	...	...	...	...	468
Patients in Hospitals,	...	...	...	...	61
Patients in Mental Hospitals,	...	...	...	...	26
Deaths during period (1918-1926 inclusive)	...	...	...	...	205
Patients untraced,	...	...	...	...	81
Patients notified in Glasgow, but resident outwith city,	...	...	...	...	68
Total					909

After deducting from this total the deaths, cases untraced, and cases resident outwith the City but notified in Glasgow, there remained, at the end of 1926, 555 cases. The present report follows the progress of these cases up to the end of 1930.

Since the beginning of 1927 until the end of 1930, there have occurred 118 deaths from chronic encephalitis lethargica, *i.e.*, 29 in 1927; 34 in 1928; 29 in 1929; and 26 in 1930. If these are deducted from the original total of 555 cases which remained in 1926, there should only be approximately 437 cases at the end of 1930, but during these years an additional 82 chronic cases have been notified for the first time, and this accounts to some extent for the present total of 475 patients.

*Chronic Cases Notified for the First Time each Year.*—These occurred as follows:—1927, 15 cases; 1928, 30 cases; 1929, 16 cases; 1930, 21 cases—Total, 82 cases.

Since the beginning of 1927 the following acute cases were also notified:—1927, 23; 1928, 4; 1929, 3; 1930, 0—Total, 30 patients.

Dr. Ashie Main of this Department in the *Journal of Hygiene*, volume 31, No. 2, April, 1931, described the condition in 1928 of a group of 70 cases whose progress had been carefully followed since the original attack occurred in 1923. Of the total 70 cases, it was found that by 1928 18 had died; 7 had recovered completely; 22 had made an incomplete recovery; 18 were Parkinsonians; and 5 had been eliminated as not encephalitis. These figures give an accurate and careful account of the very serious nature of this disease when it occurs in epidemic form.

At the end of 1930, a survey of the cases of post-encephalitis lethargica remaining in the City revealed the following facts:—

Males, ...	...	...	...	...	...	275	} Total 475
Females, ...	...	...	...	...	...	199	
Chronic cases notified for the first time during 1930, ...						21	
Deaths during 1930, ...						26	
Cases, male and female, not traced, ...						22	

The following two tables give the age distribution and housing conditions of the known patients in the City:—

#### AGE DISTRIBUTION OF CASES.

	—15 years.	15-20 years.	20-30 years.	30-40 years.	+40 years.	Total.
Males, ...	27	69	96	32	52	276
Females, ...	26	30	73	43	27	199
						<hr/> 475 <hr/>

#### HOUSING OF CASES.

	1 apt.	2 apts.	3 apts.	4 apts.	Total.
Males, ...	29	169	55	23	276
Females, ...	33	122	35	9	199
					<hr/> 475 <hr/>

It was ascertained that 105 patients resided under conditions noted as "comfortable," 189 were "fairly comfortable," while as regards 181 the conditions were "poor." Again, 167 patients, 92 males and 75 females, were regarded as fit for work, or were actually at work. Those unable to work, but not sufficiently disabled to prevent them from going about, included 141 patients, 85 males and 56 females.

There are a considerable number of patients bedridden at home, most of whom have already received hospital treatment, or whose relatives wish to keep them at home.

(2) *Hospital Position.*—From August, 1926, until October, 1930, the admissions to the special wards for post-encephalitis lethargica in Stobhill Hospital were controlled by the Department of Health for Scotland, but since then the administration of this service has

been carried out by the Public Health Department. During the period of central administration, 213 applications were forwarded to the Department of Health from Glasgow, but only 80 of these cases were admitted to hospital, and the application forms for the remainder were returned. Action in connection with them has since been taken and an analysis of this is given below.

It was found on revisiting the homes of these cases that 10 had died, 24 did not wish hospital, and that there still remained a considerable number for whom institutional treatment was required. At the same time there were in the wards in Stobhill 23 cases from areas outwith the City and most of them had occupied beds in the wards for very long periods. As no further improvement in their condition could be expected from medical treatment, arrangements were made with the various Local Authorities to make provision for their respective cases. As a result of this, practically all of them had been removed from Stobhill by the end of the year. Their dismissals, therefore, provided vacancies for an equivalent number of the Glasgow cases whose application forms had been returned by the Department of Health, and a slow turnover of the beds in the encephalitis wards became possible.

Since the allocation of the two wards in Stobhill for the treatment of post-encephalitis lethargica, the turnover of patients has been necessarily very slow, and, in fact, these wards have tended to become more and more a home for incurables rather than an institution for active treatment and research, which was their original purpose. At the present time there are in the two wards 62 cases, 31 males and 31 females. Of this total it is estimated, after a close scrutiny of the condition of each patient, that 44 (20 males and 24 females) could be transferred to some other institution, as they are unlikely to benefit by further medical treatment. A number of these cases have been in Stobhill since 1926 and few have been there for less than a year. Of the remainder, two should be certified for mental institutions, and there is hope of some improvement from the further treatment in the remaining 16 cases only. There are many cases of the disease in other city hospitals, *e.g.*, 31 in the Southern General Hospital and 5 in the Eastern District Hospital.

Great difficulty has been experienced in dealing with the hopeless case. It is recognised that many could not be looked after in their own homes. On the other hand, there are cases which could be taken home whose relatives appear to be unwilling to face this responsibility. This attitude is undoubtedly due to the long periods spent in hospital by the patients and the placing of the full responsibility for their care upon the Local Authority. Although the progressive deterioration of the post-encephalitic case is slow and insidious, yet there does not seem to be any justification for regarding this phase of the disease as infectious, and there have been no instances of secondary cases arising from the chronic case. Post-encephalitis lethargica, therefore, should not be administered as if this state belonged to the same category as the other infectious diseases dealt with under the Infectious Diseases Notification Act.

It would seem that the best way to deal with the disease is to continue with the special wards as at present in Stobhill Hospital and, when possible, transfer cases to other parts of the hospital or to another hospital, according to the patient's condition. As the numbers are slowly dwindling, it seems hardly necessary to make further provision by erecting a special institution.

*Acute Polioencephalitis.*—Only three cases were registered in 1930, against one in the previous year. All were removed to hospital.

*Acute Poliomyelitis.*—Of the 22 cases registered in 1930, there were removed to fever hospitals 14 and to other institutions 6. In the South-Western Division of the City there were 8 cases. The seasonal incidence of poliomyelitis is usually heavier in the third quarter of the year, which is the warm period, while encephalitis lethargica is more prevalent in the colder weather of spring. All the cases of the former disease in 1930 occurred at ages under fifteen, while most of the cases of the latter were at older ages.

### MEASLES.

Measles was present in the City in epidemic form during the winter of 1928-29, and as the figures were then available the outbreak was fully dealt with in the report for last year. Altogether there were 12,004 cases registered in 1930, and 1,047 of these were removed to fever hospitals. The corresponding figures for 1929 are 6,469 and 608. This method of comparing measles, however, cuts the total number of cases in the outbreak in two, with the greater proportion occurring after the beginning of the year.

As there were 266 deaths from the disease, the morbidity rate was 2.2 per cent. in 1930 compared with 1.2 per cent. in 1929. The disease was prevalent in all districts of the City.

There were also 168 cases of German measles compared with 1,458 during the preceding year.

The case rates per million of the population for both these diseases since 1926 are contained in Table XVIII. of the Appendix, and the monthly incidence in Table XIX.

### WHOOPIING COUGH.

Whooping cough has remained fairly prevalent during the past four years. The average case rate, as shown in Table XVIII. in the Appendix, is approximately two-thirds of that for measles during the quinquennium 1926-30. In 1930 there were 5,787 cases against 5,104 cases in 1929. Of the total 506 were removed to fever hospitals.

Unlike measles, whooping cough is more concentrated in its incidence, as is instanced by the heavy prevalence in Calton, where there were 212 cases, and Mile-end 231 cases, while the contiguous ward of Whitevale had only 92 cases. Again in Dennistoun there



were only 61 cases against 258 cases in the contiguous ward of Provan. The most heavily affected districts, however, were south of the river, where Hutchesontown had 367 cases and Gorbals 377 cases.

The deaths numbered 225, giving a case mortality of 3·9 per cent. against 5·0 per cent. in 1929. The mortality from whooping cough would seem to be responsible for a larger number of deaths than is the case for measles, despite the fact that fewer cases are registered. It may be that a greater number of cases of whooping cough are not brought to the notice of the Department by reason of the fact that the disease, in many instances, is so slight as not to attract attention. The disease was more or less prevalent throughout the year, with the exception of July, when the schools were closed for the summer holidays and notifications from the Education Department were not received.

### CHICKENPOX.

Registration of cases of chickenpox has remained heavy during the past five years, during which it has been kept on the list of those compulsorily notifiable because of the continued prevalence of small-pox in England and Wales.

During the year 7,205 cases were recorded, and 207 of these were removed to fever hospitals. The corresponding figures for 1929 were 8,103 and 247. There was no marked seasonal prevalence, the cases being distributed throughout the year except for the holiday month of July. Practically all the cases occurred in children under fifteen years of age. The incidence and the seasonal prevalence are shown in Tables XVII. and XIX. of the Appendix respectively.

### OTHER INFECTIOUS DISEASES.

A record of other infectious diseases dealt with, together with the number of each treated in hospital, is given in Appendix Table XVII. Among these is included ophthalmia neonatorum, and the various forms of pneumonia, which are dealt with in other sections of the report; there remain certain other diseases which are here briefly referred to.

### ANTHRAX.

There were no cases of anthrax in human beings during the year.

The practice of binding orange boxes with goatskin thongs has to a very great extent been discontinued, wire and rope being now substituted. Three samples submitted for bacteriological examination were found positive, and the findings reported to the Department of Health.

*Anthrax in Animals.*—The Veterinary Surgeon reported the finding, on the 2nd April, of the anthrax-infected carcase of a sheep in the Glasgow Meat Market. The original owner and the consignee



were reported to the Procurator-Fiscal for contravention of the Order, 1928, and the Town-Clerk instructed to take steps against them to recover the costs of disinfection and destruction.

As the Anthrax Order, 1928, does not provide for the disinfection of a railway waggon, or meat truck, in which a carcase infected with anthrax has been conveyed, representations were made to the Ministry of Agriculture and Fisheries to amend the Order in that respect.

### DIARRHŒA AND ENTERITIS.

These diseases have now come largely under control, and there has been little variation during the past three or four years. The number of deaths during 1930 remains practically the same as that for the previous year. Even in the age distribution, the deaths are almost identical, as is shown in the following table:—

#### AGE IN YEARS.

			-1	-5	5+	Total.
1927,	...	...	277	83	70	430
1928,	...	...	288	66	41	395
1929,	...	...	243	57	56	356
1930,	...	...	245	57	53	355

The deaths under one year of age still preserve their high proportion, forming nearly two-thirds of the total, while those between one and five years, equal in number the rest of the diarrhœal deaths above five years of age.

The deaths under one year of age have already been referred to in connection with infant mortality, and their sex and monthly distribution during infancy are given in detail in Tables XIII. and XIV. in the Appendix. The close association of infantile diarrhœa deaths with temperature is not now nearly so marked, although, as will be seen in the following table, the higher numbers occur during the autumn months:—

#### 1930.—DIARRHŒA AND ENTERITIS.

Month of Death.	Number of Deaths -1 Year.	Mean Temp.	Month of Death.	Number of Deaths -1 Year.	Mean Temp.
Jan., ...	12	38	July, ...	17	58
Feb., ...	18	34	Aug., ...	26	58
March, ...	28	39	Sept., ...	34	54
April, ...	15	46	Oct., ...	31	48
May, ...	12	55	Nov., ...	21	40
June, ...	10	57	Dec., ...	21	44
<hr/>					
245					
<hr/>					

*Fly Nuisance.*—Following the custom of previous years, the weekly removal of material from all dung pits throughout the City was commenced in the month of May, and continued till September. In all 17,080 sprayings of pits were carried out, the total cost incurred amounting to £480, or an average of 6.75 pence per spray.

## GROUP OF MINOR ILLNESSES ASSOCIATED WITH ABNORMAL CONDITION OF WATER.

Dr. C. M. Smith reports:—In the interior of the water supply pipes of the City, tubercles of ferric carbonate and ferric hydrate are formed and ultimately lessen the calibre of the pipes to such an extent that in top flat houses an adequate supply is not delivered. The pipes are scraped from time to time as required, after which they are flushed with water to remove the debris caused by the operation: the pipe at each end of the length to be treated is cut open to allow the implement to be inserted. Even after flushing, the water may very occasionally be turbid for some days. The turbidity, which is due to ferric carbonate and hydrate and earthy material, may infrequently in a susceptible person cause a little gastro-intestinal disturbance. The amount of iron in water should, it is said, not exceed 0.03 parts per 100,000, but after the pipes have been scraped and flushed it is possible that a higher proportion of iron will be present for a few days.

In September, 1930, soon after some of the water supply pipes in the South-Western Division of the City were scraped, complaints of gastro-intestinal symptoms alleged to be due to the turbid condition of the water were received. Practically all the complaints came from the tenants of four properties in one street. Thirty-nine persons of all ages alleged that they had suffered from various symptoms attributed to the water. There is no doubt that the most was made of any symptoms; indeed in nine instances the date of sickening preceded the day on which the scraping of the pipes began, and consequently were erroneously attributed to the water. These nine cases will not be mentioned further. The thirty cases were all of a very mild type—only eleven persons were confined to bed—five for one day, three for two days, and the remaining three for three, five and seven days. The symptoms complained of are shown in the table:—

Sickness.	Vomiting.	Diarrhoea.	Abdominal Pain.	Sore Throat.	Headache.
16	16	10	18	2	15

It is to be remembered that, during the period when the water was turbid, every minor illness that occurred in the population concerned was blamed on the condition of the water. For instance, in two cases mild sore throat was attributed to the water. Again, in children under ten years of age minor gastro-intestinal disorders, the result of errors of diet, are not uncommon, and such disorders as occurred were of course credited to the water. Among the 30 cases investigated as a result of the complaints, there were 12 children under ten years of age, of whom five were under five years. In the course of the investigation, faeces were submitted to bacteriological examination: in three children, one of seven, one of five, and one of 11/12 years, *Sonne Bacilli* were found.

These results suggested that we might be dealing with a small localised outbreak of *Sonne Dysentery* which had nothing to do with the condition of the water. Accordingly, specimens from all

persons who complained of diarrhœa, however mild, and also from the home contacts of the children who harboured the Sonne Bacilli were examined; specimens from 13 persons were examined, all of which were reported negative. It should be mentioned that the normal habitat of the Sonne Bacillus is the human host, that it is not found in water, and that bacteriological examination of the water proved the absence of pathogenic organisms. The three cases of Sonne Dysentery were all extremely mild, the diarrhœa lasting only a day or two: one child was in bed for seven days, and the other two children were not confined to bed at all. Subsequent examination of the stools from one to two weeks after they were found positive gave negative results. These cases being so mild that the family medical attendant was not consulted, there is little doubt that they would not have been recognised had they not occurred in connection with the group of illnesses attributed to the water supply. It was considered a coincidence that three cases of dysentery should occur, just as, to a less degree, it was a coincidence that some of the persons in the affected area should suffer from minor respiratory disorders. It is also suspected that cases of Sonne Dysentery are much more common than is generally recognised, so many of the cases being mild and not requiring medical attention.

Examination of water for pathogenic organisms, two days after the scraping operations had been completed, was negative. On chemical analysis the only differences from normal Loch Katrine water found were an increase in the proportion of iron, 0.13 parts per 100,000, and a minute deposit of sand and unorganised debris. The water had, of course, improved considerably by the time the samples were taken, so that the proportion of iron and debris immediately after the scraping was almost certainly much higher, and probably sufficient to account in susceptible persons for symptoms of a mild gastro-intestinal disorder. Once a few persons had suffered and noised their complaints abroad, no doubt others also became aware of symptoms by force of suggestion. The number who stated they suffered from symptoms was doubtless increased by the house to house enquiry that was instituted in the course of the investigation.

### RABIES.

No case of rabies is known to have occurred, but a number of persons bitten by dogs were reported by the police for inquiry. These are shown in relation to the season of occurrence and the severity of the bite:—

					Slight.	Serious.
1st Quarter, ...	...	...	...	...	39	4
2nd „	...	...	...	...	89	6
3rd „	...	...	...	...	89	—
4th „	...	...	...	...	44	3
					<hr/> 261	<hr/> 13
					<hr/> 274 <hr/>	

1929, ... 273    1928, ... 331

In addition to the above, one person bitten by a horse was reported for inquiry.

## TRACHOMA.

The number of cases of definite trachoma on the register at the end of 1930 was 145, a further 22 cases being considered as "doubtful." The number of new notifications received during the year was 25, and of these 11 were definite cases, 10 were "doubtful," and four were not trachoma. During the year 40 cases were removed from the register. Of these, 16 were found not to be suffering from trachoma, 7 were considered cured, and 2 died. There were also taken off a further 15 cases, for which since the end of 1928 no information was available.

Every endeavour was made to obtain the attendance of home contacts of new cases at the dispensary. Of the 27 home contacts examined, one was shown to be suffering from definite trachoma, two were "doubtful," and six suffered from varying degrees of conjunctivitis, while 18 were negative.

*Clinical.*—The disease continues to be insidious in onset, the majority of cases being chronic and not acute trachoma.

*Trachoma Dispensary.*—During the year 158 individuals attended the trachoma clinic, the total number of attendances for the year being 3,721. Of these, 1,578 were consultations with the ophthalmic surgeon, and 2,143 were for treatment by the nurse. Two operations for expression were carried out at the clinic. Two patients attending the trachoma dispensary were sent to the actino-therapy clinic at Baird Street. The number of home visits paid by the trachoma nurse was 891.

*Hospital.*—21 cases of trachoma were admitted to Knightswood, and Stobhill Hospitals during the year. Of these 14 were first cases and 7 were re-admissions. The operations carried out were as follows:—Peridectomy, 3; expressions, 10; epilations, 1; and peritomy, 1.

## MALARIA AND DYSENTERY.

Malaria was reported on twenty-two occasions and only one was removed to hospital. All were recurrences of old infections received outwith the country.

There were 74 cases of dysentery and 58 of these were removed to hospital, compared with the corresponding numbers of 119 and 81 in 1929, when the disease was more prevalent in the City than it had ever been previously. The greatest number of cases in one ward was 8 in Shettleston and Tollcross, followed by six in Kinning Park. There was no marked seasonal prevalence. The sexes were more or less equally affected and 42 of the cases occurred in children under school age, while there were 14 between the ages of five and fifteen years.

## INFECTIVE JAUNDICE.

This disease remains notifiable until the end of 1932.

No cases of this disease occurred, although its presence was suspected in connection with a small outbreak of jaundice in a family.

The family consisted of husband, wife and four children, whose ages ranged from four to ten years. The four children took ill between 9th and 31st January, with fairly similar symptoms—coryza, cough, vomiting, and in two cases otalgia. In three of the children jaundice developed on the sixth day, and lasted about three days. The illnesses were all of a mild type, causing the patient to be confined to bed not any longer than two or three days. Examination of the urine of the four cases for the organism of infective jaundice was negative, while neither rats nor mice were discovered in the house or the immediate neighbourhood. It was concluded that the children had suffered from simple infectious jaundice.



## SECTION V.

## RESPIRATORY DISEASES AND TUBERCULOSIS.

Although respiratory diseases were not so prevalent as in 1929, when there occurred an outbreak of influenza, the usual winter incidence of acute pneumonia again gave rise to a heavy demand on hospital accommodation. During 1930 there were admitted to the fever hospitals 3,273 cases of pneumonia, and to the Corporation general hospitals 702, a total of 3,975 patients out of 6,413 cases registered. In addition, 183 and 17 cases of the influenzal type were admitted to fever and general hospitals respectively, out of 347 recorded. For comparison, it may be mentioned that the cases of pneumonia registered in 1929 numbered 7,046, and of influenza 1,179.

As the average duration of residence of pneumonia in hospital last year was 30 days, it follows that the hospitalisation of this disease accounted for approximately 12,000 bed-days allotted to this infection alone during the year. As the maximum prevalence occurs in winter there were actually 522 cases occupying beds in fever hospital wards on 28th December, 1930. Thus beds formerly provided for the infectious diseases, as dealt with prior to the war, have automatically been reduced because of the provision which has now to be made for other diseases added to the list of those compulsorily notifiable, of which acute primary pneumonia is the most important.

This increased demand from year to year is illustrated by the following table, which also shows the percentage of these cases removed to hospital :—

Year.	Cases Notified.	Percentage to Hospital.	Year.	Cases Notified.	Percentage to Hospital.
1920	4,533	38	1926	6,704	55
1921	3,592	46	1927	6,252	58
1922	6,572	43	1928	6,072	66
1923	4,465	60	1929	8,225	58
1924	7,272	54	1930	6,765	51
1925	6,105	59			

It is the opinion of the Physician Superintendents of the fever hospitals, that if benefit is to result from hospital treatment of pneumonia, the patients should be admitted before the third or fourth day of illness, because of the acute nature of its onset. Empty beds must therefore be available. The actual experience, however, is, that during the winter months there is so much pressure on hospital accommodation that a waiting list of urgent cases requires to be kept, and admission arranged as the beds become vacant. Quite a number of patients are practically in a moribund condition on admission. The extent of the problem is indicated by the following statement, showing the annual number of deaths from various respiratory diseases. The rates for this and previous years have been recalculated on the



## TUBERCULOSIS.

The number of cases of pulmonary tuberculosis registered during 1930, *i.e.*, 1,687, was less by 117 than those occurring in the preceding year. This number is little more than two-thirds of those notified as recently as ten to fifteen years ago. The number of beds now available in hospitals and sanatoria are shown in Table XX. in the Appendix, and amount to 441 in hospitals, 269 in sanatoria, and 148 in general hospitals and Public Assistance institutions, or a total of 858 for pulmonary cases, all of which are continuously occupied. The annual death-rate still reveals a continued decline. For instance, in 1930 there were 876 deaths from pulmonary tuberculosis compared with 1,025 in 1929, and the death-rate was 805 as compared with 941 per million of the population for the previous year.

The death rates from pulmonary tuberculosis in succeeding periods have been as follows :—

1881-1890, 2·680 per 1,000 living.	1923, - 1·029 per 1,000 living
1891-1900, 2·015           ,,	1924, - 1·026           ,,
1901-1910, 1·533           ,,	1925, - ·943           ,,
1911-1915, 1·346           ,,	1926, - ·876           ,,
1916-1920, 1·191           ,,	1927, - ·869           ,,
1921, - 1·007           ,,	1928, - ·876           ,,
1922, - ·946           ,,	1929, - ·941           ,,
	1930, - ·805           ,,

The death-rates for several large towns are shown in the table which follows :—

## PHTHISIS DEATH RATE PER 100,000 IN CERTAIN TOWNS.

	1913	1920	1924	1925	1926	1927	1928	1929	1930
<b>Glasgow,</b>	<b>143</b>	<b>106</b>	<b>103</b>	<b>94</b>	<b>88</b>	<b>87</b>	<b>87</b>	<b>94</b>	<b>81</b>
Edinburgh,	114	85	101	95	84	90	81	85	80
Dundee,	116	99	85	87	81	89	80	78	75
Aberdeen,	109	93	91	97	75	66	71	57	53
London,	—	106	98	95	88	91	89	96	87
Liverpool,	—	141	130	130	122	110	118	121	119
Manchester,	—	133	118	131	119	115	110	121	115
Birmingham,	—	95	97	98	94	89	86	94	90

The highest ward death-rate was 1,509 in Mile-end Ward, followed by 1,340 in Blythswood. Other heavy rates were Ruchill 1,257, while Anderston, Govan and Exchange all had rates in excess of 1,200. The lowest rate was 253 in Pollokshields, followed by Partick West with 400 and Camphill with 404.

The following statistics deal with cases on the register on the lines of former years:—

Summary of cases as at 31st December, 1930:—

Total cases registered from 1st January, 1910, to

31st December, 1930, ... ..	45,619
Less—Died, ... ..	24,812
(1) Verified on notification, but subsequently—	
Removed and not traced, ... ..	3,659
Removed from Glasgow, ... ..	3,020
(2) Not discovered on notification—	
Not found at address given, ... ..	1,063
Notified from Poor Law Institution (with no fixed abode), but still remaining on Register, ... ..	983
(3) Subsequently taken off registers as not suffering from pulmonary tuber- culosis, ... ..	6,552
	<hr/> 40,089

Total cases under observation at 31st December, 1930, 5,530

The number of cases registered since 1913 is summarised below:—

Year.	Cases Registered.	Year.	Cases Registered.
1913-1915 (annual average),	2,425	1926 (Old City), ...	1,732
1916-1920 „	2,410	1926 (Added Area),...	33
1921, ... ..	2,045	1927 ... ..	1,623
1922, ... ..	1,954	1928, ... ..	1,724
1923, ... ..	1,725	1929, ... ..	1,804
1924, ... ..	1,829	1930, ... ..	1,687
1925, ... ..	1,600		

*Cases Registered during 1930.*—Of the total number of cases registered during the year, 1,568 were notified in terms of the Infectious Diseases (Notification) Act, 1889, and Tuberculosis Regulations, 1912. Eight were sent by the Pensions and Military Authorities, while 111 were ascertained from other sources, as shown below:—

1. *Source of Notified Cases*—

1. Occurring in private practice, ... ..	1,010
2. Occurring in public practice:—	
(a) Poor Law cases at home addresses, ...	37
Poor Law cases from hospitals and poorhouses, ... ..	94
Poor Law cases at Dispensaries, ... ..	9
	<hr/> 140
(b) Charitable dispensaries and infirmaries, 240	
Corporation dispensaries, ... ..	178
	<hr/> 418
	<hr/> 558

Total cases notified, ... .. 1,568

Brought forward, 1,568

## 2. Source of information in cases not notified—

(a) From admission and dismissal sheets of Poor Law Institutions, ... ..	6
(b) School Medical Officers, ... ..	12
(c) Port Local Authority, ... ..	1
(d) County Medical Officer, ... ..	20
(e) From death cards only, ... ..	72
	<hr/> 111

3. From Military Authorities, ... .. 8

Total cases registered, ... .. 1,687

*Places of Residence at Time of Registration.*—When a patient is notified from a home address this is visited, and if the case can be definitely located the patient is regarded as a “home” case, even although at the time of notification he is under treatment in an institution. The results of these inquiries may be summarised as follows:—

Cases traced to home addresses, ... ..	1,564
Cases at home, but not visited at request of medical practitioner, ... ..	34
Cases where only known address was an institution, ... ..	88
Cases not found at address given, ... ..	1
	<hr/> 1,687

*Private and Public Notifications.*—The figures given in the foregoing summary refer to the total number of cases registered during the year, while the following table refers only to notifications under the Act received regarding the 1,568 cases so notified:—

Notifications,	Private.	Public.	Total.	Percentage Public.
Primary, ... ..	1,010	558	1,568	35·6
Multiple, ... ..	105	84	189	44·4
	<hr/> 1,115	<hr/> 642	<hr/> 1,757	<hr/> —

Percentage multiple  
to primary noti-  
fications in each  
group, ... ..

10·4

15·0

12·0



*Age Distribution of Cases Registered.*—This information is given in the following table for each of the three years ending 1930 :—

Age		1928		1929		1930	
		M.	F.	M.	F.	M.	F.
— 5 years,	...	48	33	25	23	35	16
—10	„	52	39	47	47	42	36
—15	„	34	57	54	52	30	49
—20	„	99	120	122	149	122	144
—25	„	132	140	129	150	129	133
—35	„	197	180	182	198	178	164
—45	„	152	123	180	100	169	109
—55	„	113	67	141	55	125	66
—65	„	61	44	76	40	61	31
Over 65 years,	...	22	11	20	14	32	16
Total,	...	910	814	976	828	923	764
Grand Total,		<u>1,724</u>		<u>1,804</u>		<u>1,687</u>	

*Housing Accommodation of Patients.*—The following table gives the house accommodation at the date of registration of such patients as had home addresses. Patients who were in institutions (mostly Poor Law) at the time of notification are included along with those who could not be traced at the addresses given :—

		1928		1929		1930	
		M.	F.	M.	F.	M.	F.
1 Apartment,	...	126	146	147	139	114	114
2	„	440	393	438	422	414	379
3	„	164	149	166	168	192	154
4	„ and up,	109	100	110	73	117	83
In Institutions and not							
traced,	...	71	26	115	26	86	34
Total,	...	910	814	976	828	923	764
Grand Total,	...	<u>1,724</u>		<u>1,804</u>		<u>1,687</u>	

*Institutional Treatment.*—The following table shows admissions to institutions of patients suffering from pulmonary and non-pulmonary tuberculosis since 1922 :—

Year.		Local Authority Hospitals.	Sanatoria.	General Hospitals.	Total.
1922,	...	2,018	714	604	3,336
1923,	...	1,959	690	555	3,204
1924,	...	1,840	499	573	2,912
1925,	...	1,531	457	606	2,594
1926,	...	1,637	425	738	2,800
1927,	...	1,458	413	615	2,486
1928,	...	1,429	418	819	2,666
1929,	...	1,501	494	753	2,748
1930,	...	1,762	608	549	2,919

*Dispensary Attendances.*—The following table shows the attendances and consultations at the various tuberculosis dispensaries in each year, 1928 to 1930. All forms of tuberculosis are included :—

Dispensary.	Number of Consultations.	Primary Attendances.		Subsequent Attendances.	
		Males.	Females.	Males.	Females.
Year 1928, ...	1,329	2,764		51,041	
„ 1929, ...	1,278	2,914		48,015	
<hr/>					
Glenfarg Street,	144	215	186	4,065	2,500
Black Street, ...	247	204	192	4,684	3,314
Adelphi Street,	192	174	202	3,829	2,903
Acorn Street,	244	328	275	7,497	5,786
Central Area,	150	220	198	3,008	2,372
Govan, ...	313	200	180	5,197	4,317
<hr/>					
Year, 1930, ...	1,290	1,341	1,233	28,280	21,192
<hr/>					
Total, ...	...	2,574		49,472	
<hr/>					
Grand Total,	...	52,046			

*Home Visitation by Nurses.*—The number of home visits by nurses during the past three years has been as follows :—

1928.	1929.	1930.
46,182	39,632	48,468

*Issue of Medical Extras, Beds and Bedding, &c., to Patients under Treatment at Home.*—In 1916 the Local Authority was granted power to provide assistance in the domiciliary treatment of patients in the form of extra nourishment and bed and bedding in necessitous cases. In 1930 these grants were made in 19 cases (medical extras) and 31 cases (bed and bedding). Issues of this nature are only granted after full inquiry, and in cases where the home circumstances are reasonably satisfactory.

*Issue of Clothing to Patients.*—The interest on the purchase price of Bellefield Sanatorium, amounting to about £400 per annum, has continued to be applied to the purpose of providing clothing for necessitous patients proceeding to sanatoria. During the year 1930 152 patients were assisted in this way, compared with 225 during 1929. The total number assisted since the inauguration of the scheme in 1916 is 2,791.

## NON-PULMONARY TUBERCULOSIS.

Non-pulmonary forms of tuberculosis show a slight increase as compared with the previous year. The relation between this and the pulmonary forms of the disease as regards incidence is shown by the fact that since 1916-20 the reduction has amounted to 23 per cent. as compared with 30 per cent. The significance of the fall in incidence, the changing types of this infection, the lessening of severity, and the administrative issues involved, have been reviewed in previous reports.

The cases notified in 1930 numbered 1,047, compared with 992 in 1929. The cases registered since 1914 when all forms of the disease were made compulsorily notifiable, are as follows :—

Year.	Cases Registered.	Year.	Cases Registered.
1914-15 (annual average),	1,303	1925, ...	... 1,115
1916-20                   ,,	1,360	1926, ...	... 1,031
1921,           ...    ...	1,141	1927, ...	... 1,101
1922,           ...    ...	1,050	1928, ...	... 1,107
1923,           ...    ...	1,234	1929, ...	... 992
1924,           ...    ...	1,221	1930, ...	... 1,047

Considerable reduction has taken place in certain forms of the disease, such as abdominal tuberculosis, as is evidenced by the death-rates given in the following table. This form of the disease was responsible for only 50 deaths per million of the population, compared with 301 during the quinquennium, 1901-5, and 197 when notification began. In 1929 pulmonary tuberculosis showed a very decided increase, which was probably associated with the serious outbreak of influenzal pneumonia during the early months of that year.

## GLASGOW.—DEATH-RATE PER MILLION OF THE POPULATION.

Year.	Tuberculous Meningitis.	Abdominal Tuberculosis.	Other Forms.	Total.
1901-5,   ...	319	301	258	878
1906-10,   ...	416	278	255	949
1911-15,   ...	285	197	183	665
1916-20,   ...	210	167	170	547
1921-25,   ...	163	103	122	388
1926, ...    ...	142	69	106	317
1927, ...    ...	148	62	103	313
1928, ...    ...	148	59	110	317
1929, ...    ...	140	64	99	303
1930, ...    ...	182	51	104	336

The following tables show (1) the distribution of the cases registered in each year in accordance with the location of the disease and sex of the patients; and (2) distribution according to certain age-periods in each year:—

TABLE I.  
SHOWING NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING 1914-1930,  
WITH LOCATION OF DISEASE AND SEX.

Year.	Glands.		Bones and Joints.		Abdomen.		Meninges.		Multiple.		Others.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914,*	159	183	239	186	79	45	73	47	11	18	70	62	631	511
1915,	176	232	192	156	135	104	137	123	52	27	71	59	763	701
1916,	199	216	185	138	155	136	136	140	40	18	75	64	790	712
1917,	203	266	196	170	155	113	93	95	41	34	70	57	758	735
1918,	186	265	158	143	119	128	92	107	34	30	78	72	667	745
1919,	138	178	164	127	126	123	93	86	40	29	56	47	617	590
1920,	138	145	193	168	116	112	89	83	39	29	44	29	619	566
1921,	149	171	165	127	116	84	78	74	27	29	68	53	603	538
1922,	134	147	141	124	130	111	75	66	20	24	42	36	542	508
1923,	145	155	181	129	145	118	102	75	16	15	78	75	667	567
1924,	149	150	145	130	140	144	104	81	35	36	65	42	638	583
1925,	145	137	150	139	131	114	75	65	29	24	54	52	584	531
1926,	135	137	142	131	115	109	78	57	24	35	35	33	529	502
1927,	131	148	186	134	127	106	89	61	22	17	45	35	600	501
1928,	132	152	150	138	113	99	84	86	20	10	61	62	560	547
1929,	117	154	138	107	109	104	86	85	10	12	38	32	498	494
1930,	111	130	124	130	129	117	98	116	9	7	44	32	515	532

\* Figures for six months ending 31st December, 1914.

TABLE II.

AGE DISTRIBUTION OF NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING EACH YEAR,  
SINCE COMMENCEMENT OF NOTIFICATION 'ON 1ST JULY, 1914.

Year.	Under 1 year.		1-5 years.		5-10 years.		10-15 years.		Over 15 years.		TOTAL.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1914, ...	60	21	132	90	140	102	134	115	165	183	631	511
1915, ...	59	49	236	161	164	140	112	108	192	243	763	701
1916, ...	64	45	244	152	149	123	108	164	225	228	790	712
1917, ...	52	48	190	134	157	156	117	149	242	248	758	735
1918, ...	30	33	163	169	137	125	129	142	208	276	667	745
1919, ...	45	28	151	109	142	123	78	136	201	194	617	590
1920, ...	57	35	143	122	128	137	110	94	181	178	619	566
1921, ...	51	35	157	111	133	122	81	94	181	176	603	538
1922, ...	38	28	175	150	103	87	71	79	155	164	542	508
1923, ...	59	19	214	165	116	112	86	79	192	192	667	567
1924, ...	50	39	212	171	96	99	103	85	177	189	638	583
1925, ...	48	22	184	144	111	103	71	77	170	185	584	531
1926, ...	28	22	162	127	109	88	63	78	167	187	529	502
1927, ...	31	28	171	102	130	82	73	77	195	212	600	501
1928, ...	29	17	152	104	115	112	83	60	180	255	559	548
1929, ...	32	27	132	102	111	95	63	66	160	204	498	494
1930, ...	31	27	145	137	116	124	62	74	161	170	515	532



## ACTINOTHERAPY CLINIC, BAIRD STREET.

This year the number of out-patients attending the clinic has decreased, probably due to the increase in the institutional accommodation for non-pulmonary tuberculosis. The majority of the out-patients suffered from adenitis and the results have been very satisfactory. In most cases, where a sinus is present, the patient receives one month's general carbon arc treatment before having any local application. Where the disease appears to have affected the skin as well as the gland, it has been found advisable to incise, as the chance of widespread skin destruction is lessened. Where the skin has given way before commencing treatment and has left a large scrofulo dermatous area, the healing is very much accelerated and the æsthetic result is excellent. The most outstanding case of this description this year was one where at least 10 square inches of skin in the cervical region had been destroyed. In six months' time this had completely healed, leaving only a slight ridge to mark the area. Several cases of adenitis in the inguinal area, in boys between the ages of 5-10 years, have been treated indoor, as the results were not satisfactory when the children were allowed to run about.

*Lupus and Tuberculosis of the Skin.*—The treatment of lupus was rather disappointing, as it was found a little difficult to get the patients to attend regularly and for the comparatively long periods required. Although actinotherapy can do much in the treatment of lupus to completely cure the disease in a reasonable space of time adequate and thorough local treatment is required. Previously the cases of tuberculosis of the skin, other than lupus, did extraordinary well. As in adenitis where the skin is involved, this condition is much helped by incision and packing at the correct time.

*Abdominal Disease.*—Only the milder forms of the disease were treated outdoor and the majority were considerably improved. As stated before the symptoms can be much alleviated by strict attention to diet. The indoor cases on the whole do very well and are completely cured in a little over six months' time. Where the condition was found to be acute or rather advanced, the patient was transferred to a tuberculosis hospital, but this occurred only once during the year.

*Disease of Bones, Joints, and Dactylitis.*—The number treated was rather small and the results were variable. The best results were found in dactylitis, where it is easy to put the affected part at rest. With the indoor cases, all the patients suffering from dactylitis were healed in about a year's time.

Of the miscellaneous group, only two affections showed any appreciable improvement—bronchitis in children and trachoma. In trachoma, the patients were made much more comfortable, but it could not be said that the disease was banished. In several instances of bronchitis in children, where previously the children had never passed through a winter without being several times off school and

confined to bed, the parents reported the complete absence of symptoms during the period of treatment.

The total number of outdoor cases treated was 265, of which 48 have been excluded from the table of results as having had less than one month's treatment. The indoor patients numbered 38, making a grand total of 303. Under the column "healed" are considered all those who have improved exceptionally, as well as those firmly healed. Under the column "not improved" are those who showed no change, or only slight improvement.

### NON-PULMONARY TUBERCULOSIS.

#### RESULTS OF LIGHT TREATMENT AT BAIRD STREET CLINIC.

##### *Out-patients.*

				Average duration of treatment (in months).		
				Healed.	Not Healed.	
				Healed.	Improved.	Total.
Adenitis, ...	...	...	...	95	24	119
Lupus, ...	...	...	...	9	14	23
Abdominal disease, ...	...	...	...	13	14	27
Bone and joint disease, ...	...	...	...	9	12	21
Tuberculosis cuti, ...	...	...	...	2	—	2
Dactylitis, ...	...	...	...	2	2	4
Miscellaneous, ...	...	...	...	—	—	21
Total, ...	...	...	...	130	66	217

##### *In-patients.*

				Average duration of treatment (in months).		
				Healed.	Not Healed.	
				Healed.	Improved.	Total.
Adenitis, ...	...	...	...	8	1	9
Lupus, ...	...	...	...	1	—	1
Abdominal disease, ...	...	...	...	14	2	16
Bone and joint disease, ...	...	...	...	1	—	1
Dactylitis, ...	...	...	...	7	2	9
Miscellaneous, ...	...	...	...	—	—	2
Total, ...	...	...	...	31	5	38

At the end of the year there were 224 cases attending outdoor and 9 patients receiving treatment indoor, 233 in all.

#### GOVAN TUBERCULOSIS LIGHT CLINIC.

During the year 1930 there were 113 sessions held on Tuesday, Thursday and Saturday mornings. Treatment is carried out during the nine months' term, October to June, of the following year. The period under review, therefore, embraces the last six months of the 1929-30 term and the first three months of the 1930-31 term. The attendances

numbered 2,873—males 1,288 and females 1,585. One hundred and twenty-five patients were recommended for treatment at the clinic. Of these, 40 did not attend sufficiently often to benefit, making, on an average, only 4 attendances. In some cases this was due to the fact that the course commenced late in the autumn and consequently extended into the following year, or that the patient was admitted to hospital after a short time. But if these cases be excluded there remain 22 (17 per cent.) who failed to take advantage of the treatment offered. Only cases who completed the course of treatment are included in the following table, which shows the types of lesion treated :—

Condition.	Improved.	Not Improved.	Total.
Adenitis, ... ..	39	9	48
Lupus, ... ..	5	1	6
Tuberculosis of bone, ... ..	7	3	10
Abdominal tuberculosis, ... ..	3	5	8
Pre-tuberculous condition, ... ..	2	—	2
Others, ... ..	6	5	11
Total, ... ..	62	23	85

Nine patients (four cases of lupus and five of cervical adenitis) had two courses each, one in the spring and one in the autumn of the year.

#### CLINICAL CONDITIONS.

*Cervical Adenitis.*—Cases of cervical adenitis formed the largest group and the results obtained, particularly in those complicated by sinus formation, were very satisfactory. Abscesses when they occurred were treated by aspiration, except in a few cases in young children, where incision was practised.

*Lupus.*—Treatment of lupus also gave good results, though some of the cases were severe and had had periods of treatment in institutions. It is evident that the treatment of these conditions must be prolonged over many years.

*Bone Tuberculosis.*—A number of cases of abscess of sinus originating in a bone lesion were found to respond satisfactorily to light.

*Other Conditions.*—Among the miscellaneous conditions treated were superficial sinuses and skin lesions due to pyogenic organisms. One case of extensive granulating wound following an injury healed rapidly under treatment.

*Abdominal Tuberculosis.*—The cases of abdominal tuberculosis selected for treatment did not respond satisfactorily. It has therefore become the practice to endeavour to have such cases removed to hospital rather than undertake treatment at the clinic.

*Carriers.*—Towards the end of the year 14 children who were attending a diphtheria carrier clinic at Govan Town Hall were treated (apart from the ordinary tuberculous cases) by exposure to the carbon

are in conjunction with other local treatment of the throat, nose or ear. Artificial heliotherapy seems to be a useful adjuvant in clearing up refractory ear conditions.

### X-RAY DEPARTMENT.

The newly-installed apparatus at Ruchill and Mearnskirch hospitals have given excellent results during the past year. It is possible to take excellent films of any part of the body in a very short period, and the quickness of the exposures taken, in conjunction with the softness of the tube in use, has produced beautiful detail which has been a great aid in diagnosis and has brought the X-ray work of the department up to a very high standard.

At Ruchill a new tube—the Rotalix (Philips)—has been installed, and, by means of its rotating anode, has enabled much larger currents to be used with safety. It is very difficult when using large currents for a fraction of a second to measure accurately the actual exposure. To aid this a milliamperes-second meter is essential in such work; but, even with it, it is impossible to state accurately the exposure both with reference to milliamperes and kilovolts.

The best chest work is undoubtedly done at a low kilo-voltage, such as 40 K.V., but this requires a large milliamperes-second exposure. No tube that we have yet had an opportunity of trying will stand up to a series of exposures at 40 k.v. taken at a distance of 6 feet. It is an easy matter to get one or two isolated exposures taken under these conditions, but the amount of work done in a busy day such as that at Ruchill would quickly destroy the target of any tube available. We have therefore reduced the distance to 4 feet 6 inches for routine work and increased the voltage to a point a little higher than we should otherwise have liked to use. At this distance an exposure of 50 m.a.'s is required in an average adult to get a really "soft" chest film showing all the detail. This exposure can be got by passing 1,000 m.a.'s for  $1/20$ th of a second, 500 m.a.'s for  $1/10$ th of a second, or 250 m.a.'s for  $1/5$ th of a second, but it is very difficult to be sure that the kilovoltage will remain constant when one changes the milliamperage.

No tube at present in use in this country possessing a focus sharp enough to give good chest detail will stand up to repeated exposure of 1,000 m.a.'s for  $1/20$ th of a second. This has been proved repeatedly, and the makers of the Rotalix tube do not recommend more than 20 exposures of 700 m.a.'s for  $1/10$ th of a second within an hour. It must be remembered that an exposure of 100 m.a.'s is much harder on the life of a tube if given in  $1/20$ th of a second than if given in  $1/10$ th of a second. This is a most important point and must be very carefully borne in mind in view of the nonsensical and extravagant claims that are made of routine chest work being done in  $1/40$ th of a second at a distance of five or six feet.

Another point of great importance in chest work is the make of film and the make of intensifying screen in use. During the past twelve months there has been witnessed a race in the matter of speeding by

the different makers of films. At Ruchill we have been able to experiment with a large variety, and have no hesitation in saying that the British film now on the market will give as satisfactory results as any other make of film we have been able to get hold of. At the present time, therefore, it is felt that a voltage slightly higher than we should like to use, and a distance rather less than we should prefer, must be used in routine chest examinations where a considerable number of cases have to be examined within a limited period, say, more than ten in an hour. The Rotalix tube has given excellent films, but is noisy and is of no use for screening purposes.

At Mearnskirik, the bone work is being done very satisfactorily. The smaller joints are all taken easily with the apparatus installed there in 1/20th or 1/10th of a second with beautifully soft tubes, and the larger joints are taken through a Potter-Bucky diaphragm in less than one second. This enables good detail to be obtained.

There has occurred during the past year a great advance in X-ray technique, and, with the improvement in tubes, which is bound to come very shortly, we shall be in a position to do even better work than has been hitherto attained. The number of patients examined in 1930 was greater than in any previous year, 3,300 being examined at Ruchill alone. The aid given by X-rays in diagnosis and in following the progress of disease is now made full use of throughout the Public Health Service.

FERGUS L. HENDERSON.

*Radiologist.*

*Ruchill Hospital.*—The X-ray photography and treatment carried on at Ruchill Hospital by the Consulting Radiologist has been fully described in the Reports for the past two years. The following is a summary of the work done during 1928-30:—

	1928.	1929.	1930.
X-ray Photographs taken,...	2,476	5,496	6,580
Of which—			
Hospital Cases, ...	812	552	820
Out-door Cases, ...	1,664	2,196	2,470
Treatment by X-ray—			
Number of Out-door Patients treated for Glands, ...	60	25	4
Number of Out-door Patient Attendances,	875	344	42
Treatment by Mercury Vapour Lamp—			
Number of Out-Patients treated—			
Glands, ... 4 }	8	2 } 4	6 } 10
Lupus, ... 4 }		2 }	4 }
Number of Out-door Patient attendances,	297	223	191
Number of Ward Patients, ...	50	31	84
Number of Ward Patient Attendances, ...	1,246	737	1,694



## SECTION VI.

### VENEREAL DISEASE.

*General.*—The total numbers of new cases of venereal disease attending treatment centres during the year 1930 show a slight diminution as compared with 1929. There is, however, a continuation of the upward trend in the numbers who, after examination, are found not to be suffering from venereal disease. There is also an increase in the total number of attendances for treatment. Table I. gives particulars of all the new cases admitted to the various treatment centres—both for outdoor and indoor treatment—during the year 1930. The table is divided to show, as far as out-patients are concerned, the numbers of patients attending (1) the *ad hoc* centres, (2) other treatment centres associated with hospitals, and (3) treatment in connection with the Maternity and Child Welfare Scheme. It will be seen that approximately three-quarters of the outdoor patients are dealt with at the *ad hoc* centres. This represents practically the same proportion as was found last year. The number of cases of acute syphilis also remains much the same as last year, but there is a drop of about 24 per cent. in the number of cases of late syphilis. The returns from the Lock Hospital also show a decided decrease in the amount of late syphilis dealt with, and a similar condition exists with regard to the Western Infirmary and the Eye Infirmary.

In connection with the child welfare clinics it may be mentioned that for a period during the year the routine Wasserman reactions were not taken in certain of the clinics, and possibly this may account for the considerable reduction in the number of cases of pregnant women who had treatment. The work of the child welfare centres is also referred to in the sections of this Annual Report devoted to Maternal and Child Welfare, and the City Bacteriologist's Report.

Table II. shows the total number of cases admitted to the various institutions for indoor treatment. More use is being made of the Baird Street Reception House for this purpose, there being double the number of cases admitted this year as compared with last year. Many patients, unfortunately, are reluctant to enter hospital for treatment because of the increased chance of relations and friends finding out that there is venereal disease present. Cases of epididymitis, for example, which ought always to be hospitalised, frequently have the duration of their illness greatly prolonged by continuing ambulant treatment. Usually one finds that it is only when the disease becomes so advanced as to prevent the patient working that he will consent to enter hospital.

*Extragenital Infection.*—Nine cases were noted during the year.

TABLE I.

NEW PATIENTS ADMITTED TO THE VARIOUS TREATMENT CENTRES IN 1930.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extragenital Infection.	Acute Gonorrhoea.	Chronic Gonorrhoea.	Soft Chancre.	Syphilis and Soft Chancre.	Syphilis and Gonorrhoea.	Gonorrhoea and Soft Chancre.	Balanitis.	Veneral Warts.	Stricture.	Other than Venereal.	Total.	Aggregate
<b>OUT-PATIENTS—</b>																		
<b>Ad Hoc Centres—</b>																		
<i>Male—</i>																		
Black Street, Broomielaw, and Bellahouston, ...	M.	272	130	151	3	4	1,265	385	141	5	79	6	272	19	15	870	3,617	131,9
<i>Female—</i>																		
Baird Street and Govan,	M.	—	—	—	8	—	—	—	—	—	—	—	—	—	—	7	15	4
	F.	16	30	42	15	—	80	33	—	—	8	—	—	—	—	126	350	13,0
<i>Other Centres—</i>																		
Lock Hospital,...	M.	—	—	—	25	—	—	—	—	—	—	—	—	—	—	10	35	5
	F.	5	11	40	43	—	10	241	—	—	78	—	—	—	—	62	490	19,0
Western Infirmary,	M.	20	24	84	3	2	5	8	3	2	—	—	5	—	—	32	188	5,0
	F.	1	20	53	9	3	17	25	1	—	2	—	—	—	—	16	147	6,0
Victoria Infirmary,	M.	1	2	7	—	—	1	—	—	—	—	—	—	—	—	—	11	5
	F.	—	1	8	—	—	5	—	—	—	—	—	—	—	—	1	15	5
Eye Infirmary,	M.	—	—	39	21	—	—	2	—	—	—	—	—	—	—	1	63	3,0
	F.	—	—	23	31	—	—	—	—	—	—	—	—	—	—	1	55	2,0
Royal Hospital for Sick Children,	M.	—	—	—	10	—	—	—	—	—	—	—	—	—	—	49	59	6
	F.	—	—	10	16	—	—	—	—	—	—	—	—	—	—	62	88	1,0
<i>Ante-Natal Centres—</i>																		
Maternity Hosp.,	M.	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—
	F.	1	—	20	1	—	17	18	—	—	14	—	—	—	—	80	151	2,0
Child Welfare Clinics, ...	M.	—	—	—	2	—	—	—	—	—	—	—	—	—	—	11	13	1
	F.	1	—	26	3	—	4	11	—	—	—	—	—	—	—	24	69	2,0
<b>Total No. of Out-Patients,</b>																		
		317	218	503	191	—	9,140	723	145	7	181	6	277	19	15	1,352	5,367	191,0
<b>IN-PATIENTS—</b>																		
Belvidere Hospital,	M.	2	3	3	—	—	13	—	9	1	1	—	—	—	—	1	33	—
Lock Hospital, ...	M.	—	—	—	16	—	—	—	—	—	—	—	—	—	—	5	21	—
	F.	—	—	—	33	—	14	113	—	—	78	—	—	—	—	10	248	—
Other Institutions,	M.	—	—	21	4	—	—	—	—	—	—	—	—	—	—	4	29	—
	F.	—	1	15	6	—	4	1	—	—	1	—	—	—	—	7	35	—
<b>Total No. of In-Patients,</b>																		
		2	4	39	59	—	31	114	9	1	80	—	—	—	—	27	366	—
<b>Grand Total, ...</b>																		
		319	222	542	250	—	9,143	837	154	8	261	6	277	19	15	1,379	5,733	—

*Congenital Syphilis.*—There is a remarkable falling off in the number of cases of congenital syphilis, 250 this year as compared with 351 in 1929. The diminution is obvious at all age groups, with the exception of the group 5 to 15 years. Only 84 cases under one year were treated as compared with 138 in 1929. Under 5 years 35 cases appeared as compared with 87.

TABLE II.

SHOWING TOTAL NUMBER OF PATIENTS ADMITTED FOR IN-PATIENT TREATMENT.

	Sex.	Primary Syphilis.	Secondary Syphilis.	Late Syphilis.	Congenital Syphilis.	Extragenital Infection.	Acute Gonorrhœa.	Chronic Gonorrhœa.	Soft Chancre.	Syphilis and Soft Chancre.	Syphilis and Gonorrhœa.	Gonorrhœa and Soft Chancre.	Balanitis.	Venereal Warts.	Stricture.	Other than Venereal.	Total Admissions.	Aggregate Days' Residence.	Average Days' Residence.
dere Hospital,	M.	12	14	19	—	—	113	1	40	8	8	—	3	1	6	2	227	7,255	31·9
l Street,	M.	—	—	—	2	—	—	—	—	—	—	—	—	—	—	5	7	137	19·5
	F.	3	9	4	8	—	21	4	—	—	3	—	—	—	—	13	65	2,792	42·9
Hospital,	M.	—	—	—	17	—	—	—	—	—	—	—	—	—	—	5	22	1,449	65·8
	F.	—	—	1	37	—	22	159	—	—	138	—	—	—	—	10	367	19,734	53·7
Hospitals, ...	M.	—	—	26	18	—	—	—	—	—	—	—	—	—	—	—	44	1,655	37·6
	F.	—	—	16	13	—	—	—	—	—	—	—	—	—	—	1	30	912	30·4
Total,	...	15	23	66	95	—	156	164	40	8	149	—	3	1	6	36	762	33,934	44·5

Age Incidence.—Table III. shows the age incidence of new cases.

As is usually found, the age group 25 to 35 is that in which all infections occur with greatest frequency.

TABLE III.

AGE INCIDENCE OF NEW CASES, 1930.

	—1	—5	—15	—20	—25	—35	+35	Total.
Primary Syphilis, ...	—	—	—	11	57	153	98	319
Secondary Syphilis, ...	—	—	—	11	53	89	69	222
Late Syphilis, ...	—	—	1	2	42	138	359	542
Congenital Syphilis, ...	84	35	74	29	11	12	5	250
Extragenital Infection, ...	—	—	—	—	2	5	2	9
Acute Gonorrhœa, ...	1	12	7	77	384	660	294	1,435
Chronic Gonorrhœa, ...	1	4	14	124	197	326	171	837
Soft Chancre, ...	—	—	—	8	38	69	39	154
Syphilis and Soft Chancre, ...	—	—	—	—	2	5	1	8
Syphilis and Gonorrhœa, ...	—	—	3	48	74	92	44	261
Gonorrhœa and Soft Chancre, ...	—	—	—	—	3	2	1	6
Balanitis, ...	—	—	—	37	100	105	35	277
Venereal Warts, ...	—	—	—	—	8	8	3	19
Stricture, ...	—	—	—	—	1	1	13	15
Other than Venereal, ...	116	58	38	87	257	503	320	1,379
Totals,...	202	109	137	434	1,229	2,168	1,454	5,733

*Treatment.*—The following table shows the standard course which has been adopted as the basis for the treatment of all cases of uncomplicated early syphilis at the *ad hoc* centres, and at the Western Infirmary.

			"914" N.K. by intravenous route in grams.	Bi. metal in Glucose Bismotab c.c.=0.2 gm.	K. 1 gr. xv. T.i.d. A.c. + = taken during ensuing week.
1st day,	...	...	0.45	1 c.c.	+
8th „	...	...	0.6	1 c.c.	+
15th „	...	...	0.6	1 c.c.	+
22nd „	...	...	—	1 c.c.	+
29th „	...	...	0.6	1 c.c.	+
36th „	...	...	0.6	1 c.c.	+
43rd „	...	...	—	1 c.c.	+
50th „	...	...	—	1 c.c.	+
57th „	...	...	0.6	1 c.c.	+
64th „	...	...	0.6	1 c.c.	+
71st „	...	...	—	—	—
78th „	...	...	—	—	—
85th „	...	...	—	—	—
92nd „	...	...	0.6	1 c.c.	+
99th „	...	...	0.6	1 c.c.	+
106th „	...	...	0.6	1 c.c.	+
113th „	...	...	—	—	+
					Wasserman Reaction of Blood.

Total,—“914” = 5.55 grams. Bismuth metal = 2.8 grams.

Four or Six months on Hutchinson's Pills.

Hydrarg. c. Cret.

Pulv. Ipecac. Co. a.a. gr. i.

One pill T.i.d. P.c.

and then if Wasserman of blood was negative, repeat the whole course.

It is thought that a great deal of opportunity has been lost for obtaining data as to what constitutes the best course of treatment for syphilis by reason of the frequent and often irrational alterations in courses which take place in certain clinics. Medical opinion swings round from small dosage to heavy dosage of arsphenamine compound, but it has been considered advisable to keep to the present course for a long period in order that results which would be of value from the statistical point of view will be obtained. The dread of inducing one of the serious complications which occasionally arise from the administration of salvarsan or its substitutes must always be in the mind of the clinician. In a series of observations taken, involving 483 cases of syphilis at all stages, complications due to the arsphenamine used occurred in appreciable severity in 106. The more serious complications were, of course, jaundice, which occurred in 24 cases, and dermatitis, which occurred in three cases. There were during the year two deaths which could be associated with the administration of arsphenamine, one due to exfoliative dermatitis and one to acute cerebral reaction.

With respect to gonorrhœa, the treatment of certain chronic cases by diathermy is still being carried out with considerable success.

The standard of cure in gonorrhœa has been under consideration for some time, and in the major clinics for male cases the following standards have been adopted as guides to the dismissal of patients —

- |                           |     |     |  |
|---------------------------|-----|-----|--|
| I. Rest Period,           | ... | ... | Patient should remain off local treatment for a period of one month, but some mild urinary antiseptic might be given weekly. |
| II. Physical Examination, | ... | ... | After above rest period.   |
| (a) Urethra,              | ... | ... | No discharge.  |
| (b) Urine,                | ... | ... | Clear.   |
| (c) Prostatic Smear,      | ... | ... | Not more than one or two cells in one field.   |
| (d) Instrumentation,      | ... | ... | A bougie should provoke no reaction.   |
| (e) Urethroscopy,         | ... | ... | There should be not more than a very slight injection of mucous membrane at any point.                                       |

The above examination can be carried out at one sitting. A subsequent examination is necessary to determine the absence of reaction due to instrumentation.

For chronic cases it is more difficult to frame a standard which will act as a clinical guide, but one has been drawn up, the main point in which is the insistence upon three months' observation without retrogression. There have been very few instances of relapse in cases who have been dismissed after passing these standards.

*Defaulting from Treatment.*—Table IV. shows the numbers of defaulters and dismissals for the year ending 31st May, 1930, and Table V. shows the ratio of defaulters to new cases and total dismissals for the calendar year 1930. On the whole there has been a marked improvement in the attendance of cases. A larger proportion are continuing on to completion of treatment, and especially is this improvement noticeable in the male clinics. With regard to acute syphilis there were 406 new cases admitted to the three male centres during the year, whereas 234 patients suffering from acute syphilis left the clinic before treatment was complete. From analysis of the case records of these patients it is found that a number equal to 14 per cent. of new cases had less than one month's treatment, and 27 per cent. had less than three months' treatment. In the female *ad hoc* centres the proportions are very similar. It is calculated that of the 406 new cases 14·5 per cent. were definitely in an infectious condition on leaving off treatment. On the other hand, about 43 per cent. of cases were to all intents and purposes rendered non-infectious by treatment. There is no doubt that, in spite of the negligence on the part of many patients to follow their treatment to its conclusion, considerable reduction in infection is being produced. Out of a total of 535 cases of syphilis discharged from the three male *ad hoc* centres, either as medical dismissals, transfers, or defaulters, 50 per cent. roughly had one or more courses of treatment.



TABLE IV.

SHOWING NUMBERS OF DEFAULTERS AND DISMISSALS FROM 1ST JUNE, 1929, TO  
31st MAY, 1930.

	Syphilis.		Gonorrhoea.		Soft Chancre.		Mixed Infections.		Conditions other than Venereal.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Number of persons who, at the commencement of the year, were under treatment or observation for—	1,479	1,249	1,250	687	22	1	95	436	—	—	2,846	2,333
Defaulters returning, ...	63	74	63	38	—	—	3	44	—	—	129	1
Transfers from other Centres, ...	101	42	191	14	32	—	20	5	8	4	352	
Cases in which treatment or observation was commenced during the year, ...	858	484	1,990	593	153	1	94	181	990	389	4,085	1,666
Total, ...	2,501	1,849	3,494	1,332	207	2	212	666	998	393	7,412	4,302
Number of persons who ceased to attend the Centre—												
(a) before completing a course of treatment for— ...	453	293	787	268	38	—	75	99	—	—	1,353	6
(b) after completing a course of treatment but before final tests as to cure of— ...	333	431	544	116	27	1	20	178	—	—	924	7
Number of persons transferred to other Treatment Centres after treatment for— ...	183	120	336	97	51	—	27	106	—	—	597	3
Number of persons discharged from the Centre after completion of treatment and observation for— ...	38	53	465	411	49	1	4	57	—	—	556	5
Number of persons who died while under treatment for— ...	9	16	2	1	—	—	—	1	—	—	11	
Number of persons who, at the end of the year, were under treatment or observation for— ...	1,485	936	1,360	439	42	—	86	225	1	3	2,974	1,666
Total, ...	2,501	1,849	3,494	1,332	207	2	212	666	1	3	6,415	3,802

TABLE V.

RELATION OF DEFAULTERS TO NEW CASES AND TO TOTAL DISMISSALS  
FROM 1st JANUARY, 1930, TO 31st DECEMBER, 1930.

	Syphilis.		Gonorrhoea.		Soft Sore.		Mixed Infections.		Total.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
New cases, ... ..	858	484	1,990	593	153	1	94	181	3,095	1,259	4,354
Dismissals (treatment completed),	38	53	465	411	49	1	4	57	556	522	1,078
Defaulters (treatment not completed), ... ..	453	293	787	268	38	—	75	99	1,353	660	2,013
„ (treatment completed but before test as to cure), ... ..	333	431	544	116	27	1	20	178	924	726	1,650
Total defaulters, ... ..	786	724	1,331	384	65	1	95	277	2,277	1,386	3,663
Defaulters and dismissals, ... ..	824	777	1,796	795	114	2	99	334	2,833	1,908	4,741
Percentage of defaulters to new cases, ... ..	91.6	149.5	66.8	64.7	42.4	100.0	101.0	153.0	73.5	110.0	84.1
Percentage of defaulters to total dismissals, ... ..	95.3	93.1	74.1	48.2	57.0	50.0	95.9	82.9	80.3	72.6	77.2
Percentage of defaulters (treatment not completed) to total dismissals, ... ..	54.9	37.7	43.8	33.7	33.3	—	75.7	29.6	47.7	34.5	42.4
Percentage of defaulters (treatment completed) to total dismissals, ... ..	40.4	55.4	30.2	14.5	23.6	50.0	20.2	53.2	32.6	38.0	34.8

With regard to acute gonorrhoea, the total new cases at the three principal male centres numbered 1,265, and of these it is estimated by a survey of each patient's records that 16 per cent. were infectious on defaulting from treatment, and that about 36 per cent. of the new cases defaulted but were probably non-infectious at the time of default. It will be seen here again that all cases which default are not necessarily infectious.

It has been found that a considerable number of patients leave off attending the clinics after treatment has been stopped, but before they are medically discharged. In one centre a special session has been instituted by one of the clinicians for the sole purpose of examining patients as to cure. This expedites the actual examinations and seems to have the effect of making the patients return. In any case, after a very short period the regular dismissals from this centre are increasing.

*Work of the Nurse Almoner.*—During 1930, 708 visits were paid by the nurse almoner. These visits included the follow-up of 315 patients who had interrupted their course of treatment at the female dispensaries. Of these 315, 121 did not resume satisfactory treatment, 12 patients were not found at the addresses given and one had died. Of the remaining 108 patients, 18 were considered by the Clinical Officer to be in a definitely infectious condition.

*Salvarsan Substitutes issued to General Practitioners.*—During the year salvarsan substitutes amounting to 1,476 doses were issued to 48 doctors. In 1929 the number of doctors on the list was 47, and to these 1,711 doses were issued.

## SECTION VII.

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### PORT LOCAL AUTHORITY.

The constitution of the Port Local Authority is laid down in the Order of the Local Government Board for Scotland, constituting the Local Authority of the Burgh of Glasgow, in terms of the Public Health (Scotland) Act, 1897, the Port Local Authority of the Port of Glasgow. Article III. is as follows:—

“The jurisdiction of the said Port Local Authority shall, subject to the exceptions hereinafter in this article mentioned, extend to the whole of the said Port of Glasgow as defined by the Treasury Warrant, dated 19th. April, 1859, and to the place or places for the time being appointed as the Customs’ Boarding Station or Stations for the said port, and the place for the time being appointed for the mooring or anchoring of ships for the said port under any regulation for the prevention of the spread of diseases under Part 4 of the Public Health (Scotland) Act, 1897, and to all waters, harbours, and strands belonging to the said port, &c.”

The duties of a Port Local Authority are laid down in the Public Health (Scotland) Act, 1897, and in the Public Health Port Administration (Infectious Diseases) Regulations (Scotland), 1921, made by the Scottish Board of Health.

The Port staff now consists of a Boarding Medical Officer and a Supervising Inspector, five Sanitary Inspectors for food inspection, infectious diseases, and nuisances, three Inspectors at Greenock Boarding Station, four Rat Catchers and Searchers., and two Fumigators.

*Summary of Work during the Year 1930.*—One thousand six hundred and twenty-five vessels passed the boarding station bound for the Port of Glasgow. Of these, 571 had come from or called at infected ports—316 direct or with foreign inward cargo on board, and 255 light or with outward cargo on board.

There were also 668 vessels from the Irish Free State. The total tonnage of the 1,625 vessels from foreign ports was 4,736,062 tons, as compared with 1,651 and 4,929,467 during the year 1929.

## NUMBER OF SHIPS ARRIVING FROM FOREIGN AND IRISH FREE STATE PORTS DURING THE YEAR 1930.

MONTH.	FROM INFECTED PORTS.										FROM NON-INFECTED PORTS with or without Cargo.						Total from Foreign Ports.			From Irish Free State Ports. Ships.
	Class A direct, or with Foreign Inward Cargo.			Class B Light or with Outward Cargo.			Total of A and B.			From Non-Infected Ports with or without Cargo.			Total from Foreign Ports.							
	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.					
January, ...	26	1,931	—	22	1,155	—	48	3,086	—	90	3,635	276	138	6,721	276	45				
February, ...	27	1,898	—	19	1,104	—	46	3,002	—	81	3,256	379	127	6,258	379	43				
March,...	24	1,580	—	24	1,462	—	48	3,042	—	93	4,813	892	141	7,855	892	52				
April, ...	22	1,459	1	22	1,312	—	44	2,771	1	94	5,176	653	138	7,947	654	45				
May, ...	26	2,166	3	20	1,173	—	46	3,339	3	88	5,548	1,683	134	8,887	1,686	58				
June, ...	27	1,852	4	20	1,077	—	49	2,929	4	93	5,729	4,605	140	8,658	4,609	56				
July, ...	29	2,064	—	19	947	—	48	3,011	—	83	4,509	3,438	131	7,520	3,438	58				
August, ...	28	1,932	—	28	1,768	—	56	3,700	—	88	6,382	3,902	144	10,082	3,902	72				
September, ...	22	1,635	—	20	1,244	—	42	2,879	—	78	5,103	2,048	120	7,982	2,048	57				
October, ...	25	1,459	—	22	1,467	—	47	2,926	—	87	5,198	2,090	134	8,124	2,090	70				
November, ...	26	1,876	1	19	1,032	3	45	2,908	4	86	4,038	1,135	131	6,946	1,139	64				
December, ...	34	2,448	7	20	1,113	—	54	3,561	7	93	4,319	1,211	147	7,880	1,218	48				
Totals, ...	316	22,300	16	255	14,854	3	571	37,154	19	1,054	57,706	22,312	1,625	94,860	22,331	668				
1929, ...	265	19,240	195	282	17,170	307	547	36,410	502	1,104	61,335	17,159	1,651	97,745	17,661	645				

The following table gives the countries outwith the British Isles with which the port has its principal trade, and shows nature of imports and exports :—

PORTS.			IMPORTS.	EXPORTS.
U.S.A.,	...	...	Corn, grain and other farinaceous substances, provisions, fruit, timber, sewing-machines, tobacco, and all kinds of machinery, &c., ...	Manufactured cottons, leather oilcloth, herrings, machinery, sanitary ware, and other sundries.
CANADIAN,	...	...	Corn, grain and other farinaceous substances, provisions, fruit, timber, &c., ...	Textiles, machinery, chemicals, spirits, herring, oilcloth, &c.
INDIAN,	...	...	Rice, beans, peas, tea, timber, cocoanuts, and oils, ...	Textile goods, machinery, spirits, paints, provisions, and manufactured goods.
FRENCH,	...	...	Brandies, wines, canned and dried fruits, vegetables and oils, ...	Machinery, chemicals, oils, coal and coal products, and other sundries.
GERMAN,	...	...	Chemicals, hardware, provisions, and manufactured goods (jewellery, toys, leather, &c.), ...	Cottons, fish, leather, grease, coal, and machinery.
AUSTRALIAN AND NEW ZEALAND,			Grain, provisions (frozen meat, butters, &c.), skins, &c., ...	Textile goods, machinery, paints, chemicals, spirits, hardware, and sundries.
SPANISH,	...	...	Ores, fruits, vegetables, and wines, ...	Coal, machinery, chemicals, and other sundries.
SWEDISH,	...	...	Paper pulp, wood, matches, &c., ...	Coal, machinery, and textiles.
NORWEGIAN,	...	...	Paper pulp, timber, and canned fish, ...	Coal, sewing - machine parts, cottons, and manufactured goods.
SOUTH AMERICAN,	...	...	Grain, frozen, and canned meats, nitrates, hides, and fats, ...	Machinery, cottons, iron piping, chemicals, paints, fire-clay bricks, spirits, and manufactured goods.
BELGIAN,	...	...	Iron bars, cement, manufactured articles (baskets, brushes, pails, &c.), lard, canned vegetables, and glass,	Machinery, cottons, oils, and other goods.
AFRICAN, NORTH,	...	...	Iron Ore, esparto grass, and fibre, ...	Textiles, machinery, iron tubes and piping.
Do., SOUTH,	...	...	Grain and fruits, ...	Chemicals, paints, spirits, coal, and other sundries.
GRECIAN,	...	...	Dried fruits and ore, ...	Coal, machinery, cottons, paints, and manufactured goods.
JAPANESE AND CHINESE,			Peas, oils, and manufactured goods, eggs (liquid and frozen), ginger, ...	Machinery, cotton goods, chemicals, oils, &c.



The following table shows the number and nationality of overseas vessels with their crews arriving at the Port of Glasgow during the year 1930, as compared with 1929.

Nationality.	Number of Vessels.		Number of Crews.	
	1929	1930	1929	1930
American, ...	73	61	* 2,801	2,415
British, ...	1,355	1,300	89,043	85,601
Belgian, ...	1	1	52	38
Danish, ...	8	14	138	281
Dutch, ...	19	19	405	365
Esthonian,...	—	1	—	19
Finnish, ...	12	13	255	282
French, ...	5	1	102	10
German, ...	9	13	245	264
Greek, ...	6	7	148	193
Italian, ...	3	6	78	194
Japanese, ...	14	15	895	946
Jugo-Slav, ...	11	15	360	484
Latvian, ...	2	2	34	47
Norwegian, ...	56	65	1,104	1,301
Portuguese, ...	—	1	—	41
Panamanian, ...	—	1	—	31
Roumanian, ...	1	—	34	—
Russian, ...	3	6	112	206
Spanish, ...	55	59	1,594	1,679
Swedish, ...	18	25	345	464
	1,651	1,625	97,745	94,861

### INFECTIOUS DISEASES.

The following table shows the number and nature of the cases of disease noted during the year 1930. The first column gives the total number of cases. Column two shows that 208 were found on arrival of the ship at Glasgow. Column three refers to 166 cases dealt with at other ports during the voyage. Particulars of these are not always available, but where necessary, disinfection was carried out on the arrival of the ship at Glasgow. The other columns show how the 208 cases found on arrival were dealt with; 53 cases were removed to hospital in Glasgow, and 155 cases were permitted to go home. Twenty-four deaths were recorded during the year.

TABLE SHOWING DISEASE AND NUMBER OF CASES DURING  
THE YEAR 1930.

Disease.	Total Number of Cases.	Cases found on Arrival.	Cases dealt with in other Ports.	Cases sent to Hospital in Glasgow.	Cases sent Home.	Deaths.
Cholera, ...	—	—	—	—	—	—
Plague, ...	—	—	—	—	—	—
Yellow Fever, ...	—	—	—	—	—	—
Smallpox, ...	5	2	3	2	—	—
Enteric Fever, ...	5	3	2	3	—	—
Scarlet Fever, ...	4	1	3	1	—	—
Diphtheria, ...	2	2	—	2	—	—
Measles, ...	21	9	12	6	3	—
Whooping-cough, ...	8	1	7	—	1	—
Chickenpox, ...	8	5	3	5	—	—
Phthisis, ...	22	12	10	4	8	3
Venereal, ...	66	44	22	4	40	—
Pneumonia, ...	31	15	16	12	3	—
Erysipelas, ...	4	3	1	3	—	—
Dysentery, ...	5	4	1	2	2	—
Malaria, ...	15	3	12	1	2	1
Influenza, ...	11	3	8	—	3	—
Impetigo, ...	1	—	1	—	—	—
Scabies, ...	2	1	1	—	1	—
Mumps, ...	15	9	6	—	9	—
Dengue Fever, ...	—	—	—	—	—	—
Tonsillitis, ...	5	5	—	—	5	—
Trachoma, ...	—	—	—	—	—	—
Continued Fever, Non-pulmonary	2	2	—	2	—	—
Tuberculosis, ...	3	1	2	—	1	—
Accidents, ...	3	3	—	—	3	1
Simple Bubo, ...	1	—	1	—	—	—
Other illnesses, ...	126	71	55	1	70	19
Beri-beri, ...	9	9	—	5	4	—
Totals, ...	374	208	166	53	155	24
1929, ...	318	136	182	51	85	39

During the year 1930, 304 merchant servicemen attended the clinic at Broomielaw. The disease and numbers are, as shown :—

Gonorrhœa, ...	134
Syphilis, ...	59
Syphilis and gonorrhœa, ...	4
Chancroid, ...	31
Balanitis, ...	21
Venereal warts, ...	3
Non-venereal, ...	52
Total, ...	304

*Smallpox.*—The S.S. *Nigaristan*, bound for Glasgow, arrived at Abadan on 5th March, and on 26th March a lascar seaman was removed to hospital, said to be suffering from pneumonia. The ship sailed on 1st April, and on 7th April a lascar sickened, was diagnosed as chickenpox at Aden, and allowed to remain on board. At Jeddah he was re-examined on 12th April by the medical officer there, and removed to hospital, suffering from smallpox. At Suez all on board were vaccinated, but none of these vaccinations were successful. When the ship was 70 miles west of Malta another of the native crew sickened; his temperature was stated to be 102 degrees, and he had a rash on abdomen, arms and legs. The captain isolated the patient, and wirelessly the information to the owners.

The ship arrived at Greenock on the evening of 30th April, where the entire crew (14 British and 42 natives) were examined and re-vaccinated; 34 of the native crew being removed to the reception house. The patient on board was removed to Robroyston Hospital, and fumigation of the vessel and of all infected clothing duly carried out.

The S.S. *Tairoa* from Gladstone, Adelaide, arrived at Glasgow on 13th February, and, after deratisation, sailed for Liverpool on 22nd February, where one of the crew was reported as having smallpox. This man had been infected prior to the vessel's arrival in Glasgow, and had sickened during the ship's stay in the port.

It appears that a doctor had visited the ship from 15th to 19th February to attend the patient, and had diagnosed tonsillitis, from which he apparently recovered, returning to duty before the ship sailed.

Precautionary measures entailed a vast amount of work, as the possible contacts were almost innumerable. All the known contacts, 400 in number, were located, re-vaccinated, and kept under observation. No secondary cases occurred.

## PARROTS (PROHIBITION OF IMPORT) REGULATIONS (SCOTLAND), 1930.

The above regulations came into operation on 20th May. Between then and the end of the year 30 parrots and 6 love-birds were dealt with, most of them being re-exported and a few destroyed.

Just prior to the commencement of the order a vessel from Calcutta arrived with several cases of sickness on board and a consignment of 63 parrots, 3 lorries, and 4 crams, the property of the serang. Several of the birds were sick and four subsequently died. On further investigation the illnesses among the crew proved to be simple pneumonias and psittacosis was negatived.

## ALIENS ORDER, 1920.

All aliens intending to remain in this country for a period of three months or more are subject to medical examination. During the year 1930, 1,027 such persons were examined in 91 ships as

follows :—48 from U.S.A. ports, 29 from Canada, 13 from Europe, and one from a cruise. Six aliens were rejected as a result of medical examination, but were granted conditional landing. The rejections were for the following :—mentally deficient 2, measles 1, carcinoma 1, angina pectoris 1, erysipelas 1.

#### RETURN OF ALIEN PASSENGERS ARRIVING IN GLASGOW DURING 1930.

Nationality.				Non-Transmigrants.	Transmigrants.	Total.
Americans,	...	...	...	5,842	7	5,849
Europeans,	...	...	...	117	128	245
Asiatics,	...	...	...	8	—	8
Totals,	...	...	...	5,967	135	6,102
Do.	1929,	...	...	4,623	41	4,664

*Emigrants.*—During 1930, 162 ships carrying emigrants left the Clyde. Of these, 47 sailed for America, an increase of three, and 155 sailed for Canada, a decrease of three compared with the previous year. Passenger ships sailing from the Clyde for Australia and New Zealand embark passengers at Liverpool.

The following is a return of emigrants and ships which left Glasgow during 1930 :—

Country.	Ships.	British Subjects.	Other Nationalities.	Total.
America,	47	15,822	4,283	20,105
Canada,	115	16,827	2,339	19,166
Totals,	162	32,649	6,622	39,271
Do.	1929, 162	44,192	6,770	50,962

#### RAT DESTRUCTION.

*International Sanitary Convention, 1926.*—The work of issuing certificates to vessels under Article 28 of the above Convention was carried out satisfactorily during the year. Every effort was made to meet the requests of the shipping companies in connection with the examination and fumigation of their vessels. An appeal made to shipowners, &c., for their co-operation in order to prevent loss of time in loading and sailing met with a ready response.

An endeavour has been made to arrive at a procedure which would be uniform with the practice at other British ports with regard to the granting of Deratisation or Exemption Certificates, in view of the difficulty of fixing standards of rat infestation on ship board.

The following circulars to shipowners explanatory of the provisions of Article 28 of the Paris Convention and of the Public Health (Deratisation of Ships) Regulations (Scotland), 1929, were issued.

PUBLIC HEALTH DEPARTMENT,  
GLASGOW, 31st December, 1929.

DEAR SIRs,

DERATISATION OF SHIPS.

As you are aware, Article 28 of the Paris Convention of 1926, which is attached hereto, lays down an agreed international procedure for the inspection and deratisation of ships and the issue of appropriate certificates in connection therewith. The Convention has been ratified by Great Britain, and the Department of Health for Scotland have now made regulations under Section 78 of the Public Health (Scotland) Act, 1897. These regulations, under the title of the Public Health (Deratisation of Ships) Regulations (Scotland), 1929, come into force on 1st January, 1930, and contain provisions of importance to shipowners, as follows:—

- (1) Glasgow has been approved by the Department of Health as a port authorised to grant deratisation or deratisation exemption certificates under the regulations which now definitely empower the Medical Officer of Health and other duly authorised officers of the Local Authority, acting on his behalf, to board and inspect any ship while in the port of Glasgow.
- (2) On the arrival of a ship from a foreign port, whether direct or coastwise, the master of the vessel must, on request by a duly authorised officer, produce a valid deratisation certificate or a valid deratisation exemption certificate. A valid certificate is one which has been issued at an "approved" port and has not been current for more than six months, or, in the case of a ship proceeding to her home port, for more than seven months. Lists of approved ports are issued by the Office International d'Hygiene Publique at Paris.
- (3) The regulations provide for the periodic renewal of deratisation or deratisation exemption certificates as the case may be. If this department is satisfied that the ship is free from rats or is being maintained in such a condition that the number of rats on board is being kept down to the minimum, a deratisation exemption certificate may be granted; if, on the other hand, the ship is not maintained in such a manner, steps must be taken to have the ship deratised, and the master must make arrangements for the deratisation of the ship to be carried out to the satisfaction of the Medical Officer of Health. When deratisation has been satisfactorily completed, a deratisation certificate will be issued.
- (4) Certificates will also be issued on application in writing to this office from the owner or master of a ship as soon as satisfactory steps have been taken to deal with the rat population in the ship.
- (5) The fee, for each certificate, is two guineas, with appropriate additional charges for trapping, disinfection, &c., when such expenses are incurred.

These regulations are intended to assist in regularising the procedure as between the approved international ports, in accordance with Article 28 of the International Sanitary Convention of Paris, 1926, the provisions of which have, as a matter of fact, been in operation for some considerable time in anticipation of the issue of the formal regulations now made.

Arrangements have been made for the transmission of information between the countries which have ratified the Convention as to the satisfactory working of these arrangements, and I shall be glad, therefore, to hear of any authenticated instances of difficulty encountered with regard to your experience of Article 28.

It is the desire of this Department to co-operate with shipowners in the port in every possible way, in order to minimise inconvenience or delay to shipping. The object of the regulations is to reduce the rat population on ship board to the minimum in order to avoid the possibility of the carriage of plague-infected rats from port to port, in which the co-operation of shipping companies is earnestly requested. I trust that the satisfactory relations which have hitherto existed between shipowners and this Department will be maintained.

A further circular, dealing with details of procedure and recommendations to shipowners, will be issued later.

Yours truly,

A. S. M. MACGREGOR,  
*Medical Officer of Health.*



## INTERNATIONAL SANITARY CONVENTION, PARIS, 1926.

## ARTICLE 28.

All ships, except those employed in national coastal service, shall be periodically deratised, or be permanently so maintained that any rat population is kept down to the minimum. In the first case they shall receive Deratisation Certificates, and in the second, Deratisation Exemption Certificates.

Governments shall make known through the Office International d'Hygiene Publique those of their ports possessing the equipment and personnel necessary for the deratisation of ships.

A Deratisation Certificate or a Deratisation Exemption Certificate shall be issued only by the sanitary authorities of ports specified above. Every such certificate shall be valid for six months, but this period may be extended by one month in the case of a ship proceeding to its home port.

If no valid certificate is produced, the sanitary authority at the ports mentioned in the second paragraph of this Article may, after inquiry and inspection—

- (a) Themselves carry out deratisation of the vessel, or cause such operations to be carried out under their direction and control. On the completion of these operations to their satisfaction they shall issue a dated Deratisation Certificate. They shall decide in each case the technique which should be employed to secure the practical extermination of rats on board, but details of the deratising process applied and of the number of rats destroyed shall be entered on the certificate. Destruction of rats shall be carried out so as to avoid, as far as possible, damage to the ship and cargo (if any). The operation must not last longer than twenty-four hours. In the case of ships in ballast the process shall be carried out before taking cargo. Any charges made in respect of these operations of deratisation, and any question of compensation for damage, shall be determined in accordance with the provisions of Article 18.
- (b) Issue a dated Deratisation Exemption Certificate if they are satisfied that the ship is maintained in such a condition that the rat population is reduced to a minimum. The reasons justifying the issue of such a certificate shall be set out in the certificate.

Deratisation and deratisation exemption certificates shall be drawn up as far as possible in a uniform manner. Model certificates shall be prepared by the Office International d'Hygiene Publique.

The competent authority of each country undertakes each year to furnish to the Office International d'Hygiene Publique a statement of the measures taken under this Article, and of the number of ships which have been subjected to deratisation, or which have been granted deratisation exemption certificates, at the ports referred to in the second paragraph of this Article.

The Office International d'Hygiene Publique is requested to take, in accordance with the provisions of Article 14, all steps to secure the interchange of information regarding action taken under this Article and the results obtained.

The provisions of this Article do not affect the rights accorded to sanitary authorities by Articles 24-27 of this Convention.

Governments shall do all in their power to ensure that all requisite and practicable measures are taken by the competent authorities to secure the destruction of rats in ports and their surroundings, as well as on lighters and coastal vessels.

*Circular Memorandum to Shipowners, etc.*

INFORMATION FOR SHIPMASTERS, SHIPOWNERS AND AGENTS ON THE FUMIGATION OF SHIPS AND THE ISSUING OF DERATISATION AND DERATISATION EXEMPTION CERTIFICATES, IN ACCORDANCE WITH THE INTERNATIONAL SANITARY CONVENTION OF PARIS, 1926.

A circular explanatory of the Public Health (Deratisation of Ships) Regulations (Scotland), 1929, was issued on 31st December last. These

regulations deal with the inspection and deratisation of ships, and the issue of the appropriate certificates. It is now necessary for vessels to obtain and carry valid deratisation or deratisation exemption certificates, which are only issued at approved ports and which are *renewable every six months*.

The certificates are of two kinds—(a) a *Deratisation Certificate* granted after a ship has been subjected to a process of fumigation ; and (b) a *Deratisation Exemption Certificate* granted after detailed inspection has revealed the ship to be free from rats, rendering unnecessary the process of fumigation.

As it is now compulsory for vessels to *produce Certificates on demand*, the following suggestions have been drawn up in order to facilitate the routine work of inspection and of deratisation at the Port of Glasgow. Attention is accordingly directed to the under-noted recommendations which have been drawn up for the guidance of shipowners, agents, and shipmasters—

(1) *Procedure—*

Shipowners should anticipate the six-monthly renewal of certificates *by giving twenty-four hours' notice in writing* to the Port Medical Officer of Health for Glasgow.

NOTE.—For convenience, requests should be addressed to the Port Medical Officer of Health, Room Number 27, 23 Montrose Street, Glasgow.

(2) *Information to be submitted on a Prescribed Form* (copy attached)—

In the case of a ship requiring a certificate, the undernoted information should be forwarded along with the request—

- (a) Time of arrival of vessel ;
- (b) Name of dock and number of berth ;
- (c) Whether arriving light, or carrying inward or outward cargo ;
- (d) Final discharge of cargo ; and
- (e) Cubic capacity of all cargo spaces, provision storerooms, fore and aft peaks, crew's quarters, &c.

(3) *Preparation of Ship for Fumigation—*

As inspection and fumigation must be carried out with considerable care, the work will be facilitated and waste of time avoided if the ship is prepared for fumigation in the following manner :—

- (a) The holds should be cleaned, and dunnage stacked in such a way as to prevent rat harbourage ;
- (b) Limber boards should be removed from each side in the respective holds, and pipe casing should be opened in two places to allow penetration of gas ;

- (c) All between decks hatch covers should be removed, and all ventilators and other similar openings should be closed ; and
- (d) On the superstructure all ports should be fastened.
- (e) The fumigation of all compartments should be simultaneous—preferably when the ship is empty, and before a fresh supply of stores is taken on board ; and

Where the ship is to be fumigated with H.C.N.—

Doors of living rooms, closets, &c., should be left on the hook when the fumigant used is H.C.N., and the crew should be ready to leave the ship.

(4) *Precautions after receiving a Certificate—*

It is to the interests of ship owners that the rat population on their ships should be kept at a minimum. The procedure in this connection is of two kinds—

- (a) Avoidance of harbourage for rats by rendering vessels, as far as possible, ratproof ; and
- (b) Prevention of access of rats to ships.

For this purpose the following recommendations are made :—

- (i) Necessary steps should be taken to render vessel ratproof ;
- (ii) Rat guards of standard size should be affixed to mooring ropes, or, alternatively, ropes should be tarred for a distance of three feet from the wharf, the tar to be kept moist and applied fresh daily ;
- (iii) Vessel should be moored at least three feet from wharf.
- (iv) Passenger gangways should be whitened and well lighted at night ; and
- (v) All cargo gangways should be removed when vessel is “ silent.”

*General—*

When the work is carried out by a contractor, information as to the strength of the fumigant, time of exposure, and the necessary precautions to be observed, should be submitted to the Port Medical Officer of Health. The cost of the various methods of deratisation varies according to the method employed and the time involved, and the fee for each certificate issued is *two guineas*. The Port Local Authority repudiate all liability for damage or accident which may occur during the process of deratisation.

A. S. M. MACGREGOR,  
*Port Medical Officer of Health.*

One hundred and ninety one vessels were deratised in accordance with the instructions issued by the Department of Health for Scotland. Of these, 159 were from infected ports and 32 from non-infected ports. In 243 instances certificates of exemption from fumigation were granted, where the vessel was new or had been deratised within six months, and 22 existing certificates were endorsed. Twenty-two vessels were loaded at a distance of eight feet from the wharf, rat guards affixed, and all other methods adopted to prevent the migration of rats.

After a vessel is fumigated a thorough search is made for rats, and the following table summarises the results of fumigations, trappings, &c., during the year:—

	Number of Ships Deratised.			Ex- emptions	Number of Rats Recovered.
	By SO <sub>2</sub> .	By HCN.	By Trap- ping.		
From Infected Ports, ...	117	25	17	—	1,911
From Non-Infected Ports,	22	9	1	—	188
	139	34	18	243	2,099

The rats caught by trapping were as follows:—

	Number.
Ships from Infected Ports, ...	850
„ from Non-Infected Ports, ...	147
On docks and other Premises, ...	579
	<u>1,576</u>

The total number of rats caught by trapping, and found dead after fumigation, are classified in the following table:—

Brown Rat.	Black Rat.			Total.
Rattus Norvegicus.	Rattus Rattus.	Rattus Alexandrinus.	Rattus Frugivorus.	
182	1,190	1,055	1,248	3,675

Of the 3,675 rats trapped or destroyed by fumigation, 448 were submitted to the City Bacteriologist for examination for plague bacilli with negative result. Of the total number, 2,118 were males and 1,557 were females.

In connection with the use of H.C.N. as a fumigant, an unfortunate incident occurred during the year, involving the death of a native seaman. The crew's quarters on board a ship were being specially treated for bugs—the work being carried out by a private firm—and, following the fumigation, the ship was inspected by the fumigation company's operators, who issued a "gas free" certificate to the master of the vessel. The crew, who had been ashore while the work was being carried out, returned to the vessel on the evening of the same day and retired for the night. Nothing further was known until an attempt was made to rouse the men the following morning, when it was found that one man was dead and eight others were in an exhausted condition. The eight men were removed to the infirmary for treatment. Their condition, however, proved to be less serious



than was at first feared, and all of them were discharged during the day. The cause of the accident was the retention of H.C.N. gas in the crew's blankets and bedding, this being aided by the wet weather conditions. At the enquiry into the circumstances surrounding the man's death the jury's verdict was in the following terms :—"That death was caused by asphyxiation due to the presence of hydrocyanic acid gas ; that the shipowners, their agents, and officials, took all reasonable precautions to obviate accident ; that while the fumigating company carried out the work in a practical manner, and took all their usual precautions, the jury were of the opinion that their lack of technical knowledge prevented them from detecting the presence of hydrocyanic acid gas in its inactive condition, due to the low temperature ; that after a ship or part of a ship had been fumigated, a certificate from the fumigating company was not sufficient when fumigation was carried out with any dangerous poison such as hydrocyanic acid gas ; that regulations should be introduced under which a competent official appointed for the purpose should certify the premises as fit for occupation."

*New Lascars' Home.*—An interesting and important event from the lascar seamen's point of view was the erection and opening of new premises in Queen's Dock, which replaces the existing structure. The new home is said to be the finest in Britain. The lascars' kitchen has been separated from their dining-room, and it contains special cupboards in which the daily rations can be kept. Central heating has been installed, and the premises are well lit and ventilated. There are also special stores for the keeping of kit and bedding, and a room where clothes may be dried. Separated from the Lascars' Home by an enclosed courtyard is the restaurant for white officers and seamen, the premises being up to date and extremely well equipped.

### NUISANCES ON SHIPBOARD.

2,658 inspections and reinspections of vessels in harbour were made during the year. The visits to oversea steamers numbered 1,624, and the revisits 636. In oversea sailing vessels, 1 inspection was made and 1 revisit, while 311 coasting steamers and 24 sailing craft were examined, revisits being paid to 48 of the former and 13 of the latter, 102 verbal warnings were given to masters where nuisances of a minor nature were found, and 191 intimations and 7 notices (under the Public Health Act) were served where defects existed. 599 verbal instructions were given, and 52 notices served on masters of vessels *re* locking-up of water-closet accommodation while vessels were in port.

The nuisances discovered numbered 2,418—in forecastles, rooms, &c., 713, and water-closets, wash-houses, &c., 297, while structural defects were found in 552 instances—440 within crews' quarters, and 112 in water-closet and lavatory compartments. General complaints were recorded in 856 instances.



*Sanitary Defects and Nuisances.*—The following table shows the nuisances found on board vessels arriving in the harbour —

ARISING FROM STRUCTURAL DEFECTS.

*Forecastles, Rooms, &c.*—

	1928.	1929.	1930.
Overhead decks leaking, ... ..	73	104	95
Ports defective, ... ..	127	205	155
Skylights out of repair, ... ..	3	4	2
Without scupper-pipe or same cemented, ...	2	1	1
Ventilators plugged, out of repair, or unshipped,	2	3	2
Without bogies or funnels, or such out of repair,	11	14	19
Inadequately lighted or ventilated, ... ..	21	19	17
Radiators or steam-pipes defective, ... ..	20	18	17
Doors to forepeak and forecastle broken, ...	2	4	6
Ships' sides leaking, ... ..	1	2	1
Anchor chain exposed by sheathing being out of repair, ... ..	1	1	2
Doors of food lockers and seats out of repair,	41	90	99
Requiring wood sheathing or cork-spraying for "sweat," ... ..	3	4	2
Hawse pipes defective, ... ..	2	5	6
Floors broken and out of repair, ... ..	2	4	10
Bulkhead between forecastle and w.c. compartment broken, ... ..	1	2	1
Scuppers required, ... ..	1	3	2
Waste pipe leaking, ... ..	1	2	3
	314	485	440

*Water-closets, Urinals, Wash-houses, &c.*—

Flushing apparatus, basins or discharge pipes defective, ... ..	32	33	25
New water-closet required, ... ..	10	16	12
Ports defective, ... ..	2	3	4
Floor and woodwork out of repair, ... ..	2	2	4
Doors broken and new locks required (w.c.'s must be locked while ship is in harbour),	18	21	18
Ventilators plugged, ... ..	3	4	3
Woodwork of w.c. basin broken, ... ..	23	30	32
Compartments defective in light and ventilation,	13	15	14
	103	124	112

## ARISING FROM MISUSE.

*Forecastles, Rooms, &c.—*

	1928	1929	1930
Alleyways and companionways dirty, ... ..	85	90	101
Floors, mat coverings, ceilings, woodwork, &c., dirty, ... ..	136	194	185
Interior of ships' sides or woodwork dirty (to be limewashed or repainted), ... ..	92	125	131
Galleys dirty, ... ..	12	16	16
Tables and benches dirty, ... ..	203	244	246
Scuppers choked (water lying stagnant), ...	24	19	15
Bunks dirty, ... ..	10	17	19
	<u>562</u>	<u>705</u>	<u>713</u>

*Water-closets, Wash-houses, &c.—*

Floors, ceilings, and woodwork dirty, ... ..	77	111	94
Basins, hoppers, or troughs fouled, corroded, or choked, ... ..	105	111	100
Scuppers choked, ... ..	39	40	29
Wash-house dirty, ... ..	3	5	7
Interior requiring limewashing or repainting, ...	44	47	64
Waste-pipe defective, ... ..	3	4	3
	<u>271</u>	<u>318</u>	<u>297</u>

## GENERAL NUISANCES.

Food lockers dirty, ... ..	212	304	286
Bilges (hold) dirty, ... ..	55	66	67
Gear and foodstuffs stored in sleeping compart- ments, ... ..	9	14	12
Drinking-water tanks dirty and in need of re- cementing, ... ..	57	70	74
Drinking-water tanks out of repair or uncovered,	2	6	2
Accumulation of rubbish in forecastle or on deck,	102	143	72
Forecastle infested with vermin, ... ..	99	121	184
Bedding dirty or verminous, ... ..	10	91	159
Bilges ventilating into forecastle, ... ..	—	1	—
	<u>546</u>	<u>816</u>	<u>856</u>

The following table shows the number of oversea and coastwise ships inspected in the harbour during the years 1928-1930:—

		Inspections.			Re-inspections.		
		1928	1929	1930	1928	1929	1930
Oversea Steam,...	...	1,591	1,650	1,624	721	726	636
„ Sail, ...	...	1	1	1	2	1	1
Coast Steam, ...	...	293	355	311	30	31	48
„ Sail, ...	...	23	15	24	4	6	13

						1928	1929	1930
Intimations, ...	...	...	...	...	...	176	205	191
Warnings, ...	...	...	...	...	...	89	128	102
Notices, ...	...	...	...	...	...	4	6	7
Letters to other Port Authorities,	...	...	...	...	...	40	52	58

#### Nuisances—

Functional, ...	...	...	...	...	...	833	1,023	1,010
Structural, ...	...	...	...	...	...	417	609	552
General, ...	...	...	...	...	...	546	816	856

Of the total arrivals, 1,300 were British and 325 vessels sailed under foreign flags, the latter including 20 different nationalities, Americans, Norwegians, Spaniards, Germans, Jugo-Slavians, Swedes, and Finns predominating.

The following leaflet has been issued:—

### PREVENTION OF BUG INFESTATION OF SHIPS.

The following information and advice have been prepared in order to assist the masters of ships and others in the prevention and control of the bug nuisance.

The bed bug is a common insect pest on ship-board, and a frequent source of nuisance in crews' and even in passengers' quarters.

Once a ship becomes infested, it requires care and attention and a knowledge of the bug to get rid of the pest, and many of the methods adopted are useless.

In order to exterminate these pests, to prevent their access to ships, and to keep vessels free from them, it is essential to know the habits of the insect and its stages of life from the egg to the adult if remedies are to be applied with success.

For this reason, before describing remedies, an account is given, along with suitable illustrations, of the development of the bug from the egg to the adult or fully-grown stage.

#### LIFE HISTORY OF THE COMMON BED BUG.

*The Insect.*—The fully-grown adult bug is readily recognised as a flat, mahogany brown, six-legged, wingless, blood-sucking insect of nocturnal habits (figure 1). When unfed, its body is as thin as paper, which permits the insect to retreat into the narrowest of chinks and shelters in woodwork, furniture, picture frames, and even the joints of iron bedsteads, and it is in such retreats that the bug will be found.

When fully grown, it is about a quarter of an inch in length and an eighth of an inch in breadth at the broadest part of its abdomen. It feeds entirely by inserting its sharp proboscis, usually into human beings, and rapidly sucking up blood until it is full. The insect is fragile, and easily squashed. It emits a heavy odour because of a substance produced by special glands. This offensive odour, in addition to being disgusting to human beings, protects the bug from



being preyed upon by its natural enemies. The bug can live without food through long periods, for several months in fact, and this feat of starvation accounts for its persistence in habitations, and also for the difficulty experienced in exterminating it. Destructive measures may, therefore, have to be applied constantly as well as thoroughly.

When mature, the female bug lays eggs which adhere by a thin cement to the material upon which they have been laid, such as wood, stone, metal, or any fabrics such as the edges of mattresses.

*The Eggs.*—The eggs are elongated, ovoid, pearly-looking structures easily visible to the naked eye (figure 2). They are about a twenty-fifth of an inch in length, and have an attractive appearance under a lens. During the summer months, and even at other periods of the year when the conditions are favourable, such as exist in dark, unventilated, stuffy apartments, the female is capable of laying a great many eggs, and its progeny may number over 200 in one season.

Normally the young bug emerges within ten days after the egg is laid, but this period may be very much prolonged in cold weather or by other unfavourable circumstances. The eggs may lie unhatched throughout the winter months, and in this way tide the young insect over a very difficult period. The egg case affords the contained embryo bug a very strong protection against noxious gases. It has been found that fumigants such as sulphur dioxide and hydrocyanic acid gas do not penetrate the protective egg case. The young bug must be hatched out before it can be gassed with certainty. If this point is remembered when fumigation is being carried out, a great many of the failures may be explained.

*The Young Insect.*—When the young bug emerges (figure 3), it is no larger than a minute louse, very active, and able to look after itself. It is pale in colour, and may be readily overlooked. From the time of its birth, the young bug is capable of sucking blood, which it does most greedily. Its bite at this stage is practically painless, but a small red spot is usually left to indicate the site of puncture.

*Moulting.*—In the ordinary course of events, the growing insect (figure 4) will reach the adult stage in about two months, provided the conditions under which it is developing are favourable. Complete development, however, may be prolonged beyond a year under adverse conditions. Increase of growth is accompanied by periodic moultings. The skin is completely cast on five occasions at intervals of about ten days, and each cast forms an exact mould of the insect. The moults can be found lying about wherever the bugs are developing, and are evidence of infestation. After the fifth moulting maturity is reached (figures 5 and 6), the bug assumes its true mahogany-brown colour. At this stage, multiplication begins.

Fig. 7 represents a typical colony of bugs on the back of a picture frame. This shows eggs and insects in all stages of development, somewhat magnified.



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.



## METHODS OF EXTERMINATION.

*Prevention.*—It is necessary to be on the look out for the first appearances of the bug and its eggs, and to deal with them at once. It is therefore essential that those whose duty it is to supervise the accommodation of ships' crews should have a thoroughly practical knowledge of the bug and its habits. This cannot be over-emphasised. The bug and its eggs will be found in the chinks of woodwork about bunks, the joints of iron supports, bed boards, wooden chests, furniture, picture frames, and corners not usually disturbed but providing an advantageous shelter from which to attack the sleeping victims.

Careful attention to the cleanliness of the sleeping quarters of the crew, particularly those of lascars, should in itself be sufficient to prevent infestation.

The bugs may be introduced to the ship in the boxes or other personal belongings of the crew, and also in the crevices of boards or in other mattress supports, which may be used in adding to the comfort of the sleeping bunks, and these require special attention or should be prohibited.

The mere spraying of the infested quarters with odorous disinfectants is usually futile, and might as well not be done. Simple as it may appear, thorough cleansing of all structures with soap and water, together with the scrupulous regulation of the lighting and ventilation of the crew's quarters, is the most effective procedure. Painting and varnishing of woodwork are also of great importance. By these procedures the eggs are easily dislodged and destroyed. Thus prevention consists of continuous cleanliness and frequent inspection for the presence of the bug.

*Fumigation.*—Where infestation has unfortunately occurred, fumigation with sulphur dioxide is advised. This may be applied by burning sulphur in metal pans, or by releasing the sulphur dioxide gas from cylinders of the liquified gas, precautions having been taken to seal all the exits from the compartment being fumigated. The cylinders of liquified sulphur dioxide are known as "Sulphume," and are recommended. Prior to releasing the gas, the atmosphere of the compartment and all the woodwork, bunks, floors, etc., should be sprayed with water from a spray. This need not necessarily contain a disinfectant. The presence of moisture aids the fumes in destroying bugs, fleas, lice, cockroaches, &c.

The compartment which is being fumigated should be left sealed for several hours to allow the complete action of the gas, just as is the case in fumigation to exterminate rats. Hydrocyanic acid gas, although known to be effective, is not recommended because of the danger associated with its manipulation.

It is most important to note that where the bug has gained a firm foothold, one fumigation with sulphur dioxide gas will not complete the process of extermination. Some adult bugs will have escaped

death owing to their having sheltered successfully in protective retreats; and the unhatched eggs will also have remained unharmed. In the natural course of events, these eggs will hatch in about ten days; therefore fumigation must be repeated in two weeks to kill the newly hatched young insects. When the ship is at sea, it will well repay the shipmaster to have the fumigation of suspected quarters repeated periodically. This will obviate the necessity for stripping woodwork from the crews' quarters, and also the expense of its renewal.

The presence of bugs in crews' quarters is often regarded as unavoidable, but this is quite a wrong idea. It is hoped that this explanation will be of service. The Port Sanitary officials will be glad to advise in cases of difficulty. Communications should be addressed to Port Local Authority, Public Health Department, 23 Montrose Street, Glasgow. Telephone: Central 6400.

11th November, 1930.

*Pollution of River.*—In order to reduce pollution of the river, the Clyde Navigation Trustees some years ago provided water-closet accommodation ashore for seamen. Intimation is therefore given to masters that all conveniences aboard ship must be kept locked while ship is in port. Complaints are frequently received from Deputy Harbour Masters, and others that the nuisance still continues. There is, however, no legal power under which action can be taken, at least so far as obtaining a conviction.

*Rags, Hair, Hides, and Bones.*—The following table shows the imports of rags, hair, hides, and bones, with the source of origin and number of shipments:—

Source of Origin.			No. of Ships.	Rags. Bdles.	No. of Ships.	Hair (Various) Bdles.	No. of Ships.	(Various) Bdles.	Ships.	Bones. Bags.
Continent,	...	...	75	1,435	28	786	84	23,115	4	2,216
Canada,...	...	...	—	—	8	364	2	44	—	—
United States,...	...	...	3	65	44	6,076	13	1,836	—	—
South America,	...	...	—	—	8	485	6	14,753	6	823
Australia & N. Zealand,	...	...	—	—	—	—	26	9,676	—	—
India, ...	...	...	—	—	—	—	16	1,502	12	2,294
South Africa, ...	...	...	—	—	—	—	15	856	3	147

In addition to the foregoing, there is a considerable quantity of rags imported from Irish Free State ports.

*Anthrax.*—Goat-skin thongs continue to be used as bindings for orange boxes from various ports in Spain. During the year samples have been examined by the Bacteriologist for the presence of anthrax bacillus. Several positive findings were obtained, and the results communicated to the Department of Health for Scotland. Samples of imported hides were also examined, with negative results.

## UN SOUND FOOD REGULATIONS.

The following table shows the character and quantity of the foodstuffs imported direct during 1930 (but does not include coastwise or transhipped cargoes), a percentage of which was examined by the Food Inspectors before removal:—

Article.	Weight.		Article.	Weight.	
	Tons.	Cwts.		Tons.	Cwts.
Apples, ... ..	36,298	3	Lemons, ... ..	4,705	12
Apricots, ... ..	156	—	Liquorice, ... ..	30	18
Almonds, ... ..	1,002	1	Meal (various), ... ..	21,147	—
Bananas, ... ..	112	12	Meats (canned, &c.), ... ..	5,084	10
Bacon, ... ..	96	8	Melons, ... ..	1,703	12
Baking Powder, ... ..	101	17	Milk (canned), ... ..	97	16
Barley, ... ..	34,872	15	Milk (powder), ... ..	376	—
Butter, ... ..	1,660	19	Molasses, ... ..	148	15
Cereals (Oats, Rye, &c.)	89,409	1	Macaroni, ... ..	272	12
Cheese, ... ..	3,377	19	Nuts (various), ... ..	2,969	13
Coffee, ... ..	—	10	Oils (various), ... ..	16,024	4
Cocoa, ... ..	79	—	Onions, ... ..	53,402	—
Condiments, ... ..	8,319	3	Oranges, ... ..	35,850	7
Confectionery, ... ..	914	17	Orange and Lemon Peel, ... ..	312	4
Cream of Tartar, ... ..	350	8	Peaches (canned), ... ..	911	13
Eggs, ... ..	76,750	15	Pears, ... ..	3,477	18
Eggs (liquid), ... ..	861	5	Pears (canned and dried), ... ..	1,715	15
Eggs (albumen), ... ..	1,276	16	Pineapples, ... ..	2,066	13
Fish (canned, &c.), ... ..	636	14	Plums (canned and dried), ... ..	1,014	6
Fruit (canned), ... ..	2,724	—	Pomegranates, ... ..	579	5
Fruit (dried), ... ..	6,804	17	Potatoes, ... ..	343	12
Fruit (pulp), ... ..	711	9	Peas, ... ..	11,434	6
Flour (various), ... ..	132,856	16	Rice, ... ..	6,793	8
Farinaceous Foods, ... ..	1,337	2	Sundries, ... ..	10,368	12
Glucose, ... ..	3,315	8	Sugar, ... ..	6,522	13
Grapes, ... ..	3,337	5	Syrup, ... ..	102	13
Grape-Fruit, ... ..	1,156	15	Tomatoes, ... ..	7	10
Ham, ... ..	9,145	7	Tomatoes (canned), ... ..	1,040	1
Honey, ... ..	96	6	Vegetables (canned), ... ..	1,064	19
Lard (pure), ... ..	2,694	11	Wheat, ... ..	166,980	17
Lard (compo), ... ..	173	7			
<i>Total weight, ... ..</i>			<i>777,179 tons 10 cwts.</i>		

The following foodstuffs were found unfit and disposed of to the satisfaction of the Medical Officer of Health:—

Article.	Weight.		Article.	Weight.	
	Cwts.	Qrs.		Cwts.	Qrs.
Almonds, ... ..	6	3	Ham and Bacon, ... ..	7	—
Apples, ... ..	33	—	Meats (canned), ... ..	4	2
Fats, ... ..	898	—	Milk (canned), ... ..	44	3
Fish, ... ..	1	3	Nuts (chestnuts), ... ..	50	—
Flour, ... ..	487	2	Oils, ... ..	204	—
Fruits (canned), ... ..	60	—	Oranges, ... ..	8,276	—
Fruits (dried), ... ..	5	1	Plums (fresh), ... ..	57	1
Ginger (wet), ... ..	2	—	Rice, ... ..	2	2
<i>Total weight, ... ..</i>			<i>10,140 cwts. 1 qr.</i>		

The foregoing table shows the great variety of the foodstuffs inspected and dealt with. The method of procedure in each case

is similar. The suspected foodstuffs are detained for further inspection, the consignee is communicated with, and a suitable time is fixed for the re-examination of the material. As a rule, the consignees, on being satisfied as to the unsoundness of the food, are amenable to reason, and empower the inspector to have the condemned food disposed of, thereby obviating the necessity for obtaining a warrant from the Sheriff or Magistrate. Much time is often taken up in examining and supervising the reconditioning of consignments. The following are examples of this :—

*Damaged Hams.*—Forty boxes of hams which arrived here from U.S.A. were found to be in a slimy condition and having an offensive odour. Owing to unforeseen circumstances a number of the boxes were removed by purchasers from the original consignee. In the premises to which the hams were removed it was found possible to permit of reconditioning before curing, and this was carried out under supervision, about 3 cwts. of trimmings being destroyed.

*Damaged Chestnuts.*—A consignment of chestnuts which arrived here from Spain was found, upon examination, to be infested with maggots in considerable numbers, the maggots issuing from the cases and polluting the surrounding foodstuffs. This condition was general throughout the consignment, while the nuts were also affected by a mould which had penetrated to the kernel, many being in a “cheesy” condition as well as showing maggot infestation. The husks of the nuts were enveloped with a web-like structure, within which were entangled enormous numbers of minute seeds, clinging to the husks of the affected nuts.

Samples of the chestnuts were submitted to the City Analyst, who reported them as being unfit for human consumption. The owners of the consignment, on becoming aware of the condition of the nuts, agreed to their destruction, this being carried out by the Cleansing Department. (Total weight condemned—50 cwts.)

*Damaged Bacon.*—On 2nd April a further consignment of bacon arrived from Amsterdam in a discoloured condition. The consignment (a five-bale lot—four sides to the bale), marked “Pasman,” was examined, and it was noted that part of two sides (same bale)—the shoulder and the gammon—showed greenish-blue discolouration. Samples of the discoloured meat, and a piece of hessian wrapper, were submitted to the City Analyst’s Department for analysis, in order to corroborate the opinion formed that the discolouration was due to the presence of copper salts. The Analyst’s report on the samples is given :—

“Samples of bacon and sacking in which the meat was wrapped—some portions of the rind were stained greenish-blue, whilst on others



there was no discolouration. These samples were examined for the presence of copper salts, with the following results :—

(The results are expressed as grains of metallic copper per lb.)

Rind (discoloured portion),...	...	...	...	1.87
Rind (not discoloured),	...	...	...	0.30
Sample of fat taken half-an-inch below green portion,				0.19

“The sacking, on examination, proved to contain the following quantities :—

Dirtiest portion,	...	...	...	...	1.15
Dirty portion,	...	...	...	...	0.39
Fairly clean portion,	...	...	...	...	0.11
Portion of sacking which appeared not to have been in contact with bacon,	...	...	...	...	Nil.

As regards the source of this pollution a somewhat difficult problem arises. Investigation failed to reveal the origin of such a contamination, either on the premises, wharf, railway trucks, or vessel, and the possibilities are still a matter of doubt. Possibly the original sacking may have become contaminated prior to baling of the bacon.

*Imported Inedible Fats.*—Under the Public Health (Imported Meat) Regulations, 1925, the definition of “meat” includes “any edible part of a pig or of cattle or a substance, compound, material or article of which an edible part of a pig or of cattle is an ingredient.” Thus “lard, dripping, edible tallow and similar rendered fats” fall into the category of “meat.” The second schedule of the Regulations details “Conditionally Admissible Meat,” and item (b) thereof comprises “lard, dripping, tallow and similar rendered fats.”

Part III.—Oversea Meat—Section II., Sub-section (4), states :—

“If the Responsible Officer is of the opinion that any oversea meat comprises ‘Conditionally Admissible Meat’ without an Official Certificate, he shall by notice forbid the removal of the meat, unless for exportation, or for use for manufacturing purposes not compatible with human food. An ‘Official Certificate’ means a certificate, label, mark, stamp or other voucher attached to oversea meat, or package containing such meat, by a competent authority in the country of export, which is recognised by the Minister of Health as evidence of freedom from disease in the animal from which the meat is obtained, and of dressing, preparing, and packing with all proper precautions.”

Uncertificated fat from overseas is therefore liable to be detained on arrival unless a guarantee has been received that the material is intended for technical or manufacturing purposes apart from food. It has been noted that material which is really “edible” is freely used in manufacturing processes, and material which, upon examination, is “inedible” is made use of in preparing cooking fats, &c. The term “edible,” so far as tallows are concerned, is *very* wide, and misunderstandings between importers and the responsible officer arise. To establish over these fats a measure of control by the responsible officer, and, at the same time, minimise delay in delivery, the importers have been requested on arrival of “uncertificated” material



to submit in writing a guarantee that the "fats" are for "technical" purposes only, giving at the same time the name, address, &c., of the buyer.

*Edible.*—During the year 1930, 6,507 tons, 18 cwts. of edible animal fats arrived at the Port here from oversea. This material, in most cases, was in receptacles, and in order to comply with the Oversea Meat Regulations a "certificate" was attached to each package. One or two consignments, however, did not comply with the foregoing, but subsequently a certificate, stating that the fats had been derived from animals which were free from disease, duly signed by the Veterinary Inspector of the place of origin, was produced on demand by the consignees.

Undernoted are details of the arrivals :—

				Tons.	Cwts.
Premier jus,	...	...	...	2,447	2
Oleo oils,	...	...	...	1,478	—
Tallows,	...	...	...	1,823	14
Stearine,	...	...	...	759	2
				6,507	18

*Inedible.*—During the year 1930, 932 tons (approximately) of inedible fats arrived at the Port from oversea. In no case was this material certified, i.e., neither classed as edible or inedible.

*Coastwise.*—While a considerable volume of grease still arrives coastwise, there is reason to believe that a proportion is now diverted, and arrives in Glasgow by routes other than through the Port.

#### PUBLIC HEALTH (PRESERVATIVES, &c., IN FOOD) REGULATIONS (SCOTLAND), 1925.

The above Regulations apply to all imported articles of foodstuffs except where these are intended for re-export or for use as ships' stores. The following paragraphs give an indication of the administration of these Regulations, so far as they come within the purview of the Port Local Authority.

As there was reason to believe that oranges were being treated prior to shipment, by being dipped in preparations containing boric acid and formaldehyde, samples were obtained. The following table shows the number, country of origin, and Analyst's report on samples which have been taken during the year :—

No. of Samples.	Country of Origin.					Analyst's Report.
4	Spain	...	Boron preservatives, expressed in grains of Boric Acid, per lb. ...			
3	California,	...	"	"	"	0.03 to 0.53
2	Jaffa,	...	"	"	"	0.01 to 0.02
			"	"	"	0.01 to 0.03

*Note.*—The method adopted in the examination of these samples of oranges was by washing the rinds with a very slightly alkaline solution; consequently the boron compounds detected in the washing are due not to the trace of boron compounds which are natural to oranges, but to the presence of boron compounds caused by treating or spraying the oranges with a solution containing these substances.

Mr. F. W. Harris, City Analyst, has indicated that none of the samples submitted has been found free from boron. The first examinations were made with reference to the surface treatment of the skin, or peel, of the fruit only, and not to the pulp, and a small proportion of boron was present in every case. In later examinations the pulp was also examined, and boron compounds, ranging from  $\cdot 1$  to  $\cdot 2$  of a grain per pound were found. This quantity, it may be observed, is naturally present in citrous fruit, and has no relation whatever to the surface treatment of the fruit. While the evidence indicates that some attempt to preserve the fruit by dipping in boron solution is being adopted, an obvious difficulty arises in any attempt to determine the amount of boron which might be regarded as having been added to the fruit by the process of treatment. Samples of grape fruit were also submitted and found to contain boron compounds in varying degrees from 0.01 to 0.02 of a grain per pound.

*Canned Vegetables.*—A consignment of canned peas was found to contain copper sulphate—a compound which is used for the colouring of canned peas and similar vegetables. The peas were detained and the consignee notified. On being informed that the importation of food stuffs containing colouring matter was a contravention of the Regulations, the consignee made application to be allowed to store the consignment. Permission was granted to do so, and the peas are now in store, pending a decision as to their ultimate disposal.

*Cream.*—Fairly large consignments of cream arrive from the North of Ireland and Irish Free State Ports. During the period from January to December, 18 samples of cream were obtained and submitted to the City Analyst for examination, who reported that in one instance the presence of boron preservative was detected.

*Ham and Bacon.*—During the year various consignments of ham, and bacon in small lots, usually two boxes at a time, and packed in borax arrived. In every instance the arrivals of consignments were notified by the consignees and immediately the goods were sold the name of the purchaser was also supplied. The premises of the purchasers were visited and it was noted that, in all cases, the ham and bacon were intended for and would only be used for ships' stores. This being in conformity with the Regulations, no further action was considered necessary. The number of boxes so dealt with was nine of ham and 26 of bacon.

#### ARSENIC IN APPLES.

Of 40 samples of various brands of apples, 22 were reported as containing no arsenic. Of the remaining 18 samples, 16 contained arsenic within the prescribed limit, and two contained 1-100th of a grain per lb. Twenty-nine of the samples were taken from apples landed here from North American ports, and 11 were from Australasian and Canadian ports. Of the 11 samples taken from these latter ports the arsenic found was well within the limit. It was not considered necessary to condemn any of the fruit.

## FOODSTUFFS EXAMINED.

During the year foodstuffs were sampled and submitted to the City Analyst, who reported as follows:—

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Almonds, ... ..	2	1	Mouldy, Damaged by sweat. 6 $\frac{3}{4}$ cwt.s. condemned.
Apples, ... ..	40	—	
Apricot Pulp, ... ..	1	—	
Baking Powder, ... ..	1	—	
Blackberries, ... ..	2	—	
Butter, ... ..	18	—	
Butter Substitute, ... ..	1	—	
Buttermilk, ... ..	1	—	
Cereals (Grape Nuts, Force, &c.)	14	1	Mouldy and weevily. 2 $\frac{1}{2}$ cwt.s. rice condemned.
Coffee Substitute, ... ..	1	—	
Cheese, ... ..	12	—	
Cherries (in brine), ... ..	2	—	
Confectionery, ... ..	17	—	
Cream, ... ..	17	1	Contained boron preservative.
Cream of Tartar, ... ..	12	—	
Egg Yolk (liquid), ... ..	3	—	
Egg Albumen, ... ..	3	—	
Egg Whole (liquid), ... ..	1	—	
Fats (various), ... ..	48	35	Rancid and decomposing, containing an excess of free fatty acids. Decomposing. 1 $\frac{3}{4}$ cwt.s. condemned
Fish (canned, &c.), ... ..	5	2	Contaminated with fuel oil.
Flour (various), ... ..	4	9	Contaminated with coal dust and sweat. 5 cwt.s. condemned.
Fruits (dried), ... ..	37	1	Tins burst and blown. 3 cwt.s. condemned.
Fruits (canned), ... ..	44	5	
Grape Fruit, ... ..	4	—	
Grapes, ... ..	1	—	
Gelatine (edible), ... ..	1	—	
Glucose, ... ..	2	—	
Grain (Wheat, Maize, &c.),	2	1	Damaged by moisture. 3 $\frac{1}{2}$ tons of wheat condemned.
Ginger (dry and wet), ... ..	4	1	Infested with small beetles. 2 cwt.s. wet ginger condemned.
Ham, ... ..	5	9	Contaminated with copper salts. 7 cwt.s. condemned.
Honey, ... ..	3	—	
Jam, ... ..	1	—	
Lard, ... ..	12	—	
Macaroni, ... ..	1	—	
Margarine, ... ..	1	—	
Meats (canned, &c.), ... ..	11	—	
Milk (canned), ... ..	6	1	Imperfect sterilisation. 44 $\frac{3}{4}$ cwt.s. condemned.
Milk (dried), ... ..	3	—	
Molasses, ... ..	—	1	Contained an excess of sulphur dioxide.
Nuts, ... ..	—	1	Damp and mouldy. 50 cwt.s. condemned.
Oatmeal, ... ..	1	—	

Article.	Samples Reported.		Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	Notes on Defective Samples.
Oils (various), ... ..	27	1			Contained an excess of free fatty acids.
Oranges, ... ..	8	1			Affected by a fungoid growth.
Onions, ... ..	—	2			Contaminated with white of titanium.
Pork and Beans, ... ..	5	—			
Peas, ... ..	2	—			
Sauces, ... ..	9	—			
Sugar, ... ..	7	—			
Soups, ... ..	7	—			
Syrup, ... ..	4	—			
Tartaric Acid, ... ..	6	—			
Tea, ... ..	11	—			
Tomatoes (canned), ... ..	12	—			
Treacle, ... ..	2	—			
Vegetables (peas, &c.), ... ..	10	1			Burst and blown.
Water, ... ..	3	1			Sample taken from tanks of S.S. ——— reported unfit. Tanks emptied, cleansed, and cement washed.

### FOREIGN MEAT REGULATIONS.

The following statement, compiled from information supplied by the Corporation Veterinary Surgeon, indicates the work done under the Foreign Meat Regulations:—

#### EXAMINED

##### BEEF (*Fresh Meat*)—

Quarters, ... ..	18,543
Boxes, ... ..	4,816
Bags, ... ..	135,238

##### (*Salt Meat*)—

Mess Beef (barrels), ... ..	300
Rumps (tierces), ... ..	84
Mess Beef (tierces), ... ..	100

##### VEAL.

Bags, ... ..	773
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##### MUTTON AND LAMB.

Carcases, ... ..	50,910
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##### PORK.

Carcases, ... ..	16,591
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##### (*Salt Meat*)—

Mess Pork (barrels), ... ..	775
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##### BACON AND HAMs.

Pork Hams (boxes), ... ..	8,293
„ (tierces), ... ..	20
Bacon (bales), ... ..	1,299
Pork Hams (bags), ... ..	4,787

##### OFFAL.

Ox Tongues (bags), ... ..	3,192
Ox Tails, ... ..	2,524
Ox Cheeks, ... ..	425
Ox Livers, ... ..	5,734
Ox Hearts, ... ..	768
Ox Hearts (boxes), ... ..	578
Ox Tripe (boxes), ... ..	1,136
Ox Skirts (bags), ... ..	33
Ox Sweetbreads (boxes), ... ..	11
Ox Kidneys, ... ..	1,420
Casings (casks), ... ..	165
Ducks (barrels), ... ..	20
Caul Fat (boxes), ... ..	135
Pork Loins (boxes), ... ..	6,834

#### DESTROYED.

BEEF (bags), ... ..	2,269	MUTTON (carcases), ... ..	889
„ (boxes), ... ..	3	PORK (carcases), ... ..	182

## SECTION VIII

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### HOUSING.

The rate of construction of dwelling-houses during the past few years, as shown by the linings granted from year to year by the Dean of Guild Court, is given in Appendix Table III. The number granted in 1930 up to 31st August was 3,456. The size of house for which linings were granted comprised 570 of two apartments, 1,656 of three apartments (mostly "intermediate" houses), these two groups forming the largest proportion, i.e., 64 per cent.

The principal event of the year was the passing of the Housing (Scotland) Act, 1930, which represents a further stage in the provision for dealing with insanitary houses and unhealthy areas. Consideration has been given continuously throughout the year to the application of this Act to the housing conditions of the city, and a number of areas have been selected and surveyed for inclusion in future schemes. Apart from this, a number of representations have been made under the new procedure for the closure of houses under the Act.

Housing schemes, municipal and private, have created numerous new suburbs, and have caused a large volume of movement of families from the centre outwards, while a considerable exodus of population has taken place to suburban housing schemes beyond the city boundaries. The precise effect of these movements will be measurable when the results of the recent census have been analysed in detail. There is no doubt, however, that the housing situation has been markedly relieved, particularly as regards those who desire and can afford to maintain better standards of housing.

From extensive inquiries made during the year, it is evident that there is occurring very free movement among the occupants of small houses. This aspect of housing has been investigated with special reference to the problems of occupancy of one-roomed houses, and a full report prepared for the consideration of a special sub-committee of the Committee on Health. It is in these small houses that overcrowding occurs at its worst, and in this respect they constitute a special problem presenting great difficulties in its solution under present economic circumstances. As regards overcrowding generally, little need be said, in view of the comprehensive and reliable data which will shortly be forthcoming when the census data have been analysed.



## SLUM CLEARANCE AND REHOUSING.

The following summary shows the position with regard to demolition and rehousing, as at the end of 1930, of the various schemes :—

	Number of Houses.			Total Houses in Scheme.
	Demolished.	Closed.	Still Occupied.	
Parliamentary Road Scheme, ...	121	—	—	121
1923 Scheme, ... ..	1,858	—	—	1,858
1926 „ ... ..	1,006	46	—	*1,052
1927 „ ... ..	948	66	5	1,019
1928 „ ... ..	895	165	46	1,106
1930 „ ... ..	—	1	1,287	1,288
	4,828	278	1,338	6,444

\* See note under (b) The Glasgow Improvement Scheme, 1926, for explanation of additional houses.

Further details for each scheme are given in the following notes.

(a) *Glasgow (Cowcaddens, &c.) Improvement Scheme, 1923.*—At the end of 1929 only 13 closed houses remained to be demolished to complete this scheme. These were demolished during the year.

(b) *The Glasgow Improvement Scheme, 1926.*—It was stated in the Annual Report for 1929 that this scheme had been completed. The following further action, however, falls to be noted. Properties at 30 and 36 Ardgowan Place had been included in the scheme, but during the course of the enquiry, the owners intimated that they intended to acquire certain front lands facing Weir Street and then to demolish the houses in Ardgowan Place. The Corporation agreed to the scheduled properties being deleted from the scheme on this footing, with the proviso, which was part of the agreement, that if the owners for some reason failed to acquire the front properties they should hand over the scheduled properties to the Corporation upon payment of the same compensation as would have been paid to them under the scheme. During the year the owners intimated that they had failed in their negotiations, and handed over the properties to the Corporation. All the houses were evacuated by 28th November. Of the 46 tenants, 32 were transferred to Corporation houses, 12 exchanged with tenants who were substituted to Corporation houses, and two removed elsewhere. The properties were subsequently demolished in March, 1931.

(c) *The Glasgow Improvement Scheme, 1927.*—At the end of the year only five houses were occupied.

	1 apt.	2 apts.	3 apts.	4 apts.	Total
<i>Houses closed or unoccupied at commencement of Scheme—</i>					
Number demolished prior to 31st Dec., 1929, ...	—	3	—	—	3
Number still to be demolished at 31st Dec., 1930,	2	—	—	—	2
	2	3	—	—	5
<i>Houses in occupation at commencement of Scheme—</i>					
Number closed and demolished prior to 31st Dec., 1929, ... ..	240	248	19	1	508
Number closed prior to 31st Dec., 1929, and demolished during 1930, ... ..	90	130	7	—	227
Number closed and demolished during 1930, ...	107	93	9	1	210
	437	471	35	2	945
Number closed prior to 31st Dec., 1929, and not demolished at 31st Dec., 1930, ... ..	—	—	—	—	—
Number closed during 1930 and not demolished at 31st Dec., 1930, ... ..	44	20	—	—	64
	44	20	—	—	64
Number still in occupation at 31st Dec., 1930, ...	2	3	—	—	5
Total Houses in Scheme, ... ..	485	497	35	2	1,019

*Number of Families—*

## Transferred to Rehousing Schemes—

Prior to 31st Dec., 1929, ... ..	477
During 1930, ... ..	202
“Substituted” and Transferred to Rehousing Schemes—	
Prior to 31st Dec., 1929, ... ..	135
During 1930, ... ..	34
Removed voluntarily or on account of non-payment of rent, &c.—	
Prior to 31st Dec., 1929, ... ..	169
During 1930, ... ..	69
Still to be provided for at 31st Dec., 1930, ... ..	5

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1,091

(d) THE GLASGOW IMPROVEMENT SCHEME, 1928.—At the end of the year only 46 families remained to be re-housed.

<i>Houses closed or unoccupied at commencement of Scheme—</i>	1 apt.	2 apts.	3 apts.	4 apts. and up.	Total
Number demolished prior to 31st Dec., 1929, ...	—	3	—	—	3
„ demolished during 1930, ... ..	2	2	—	—	4
„ still to be demolished at 31st Dec., 1930, ...	—	—	—	—	—
	2	5	—	—	7

*Houses in occupation at commencement of Scheme—*

Number closed and demolished prior to 31st Dec., 1929, ... ..	63	68	3	—	134
Number closed prior to 31st Dec., 1929, and demolished during 1930, ... ..	88	86	9	1	184
Number closed and demolished during 1930, ... ..	364	184	19	3	570
	515	338	31	4	888
Number closed prior to 31st Dec., 1929, and not demolished at 31st Dec., 1930, ... ..	2	—	—	—	2
Number closed during 1930 and not demolished at 31st Dec., 1930, ... ..	98	62	1	2	163
	100	62	1	2	165
Number still in occupation at 31st Dec., 1930, ...	21	25	—	—	46
Total Houses in Scheme, ... ..	638	430	32	6	1,106

*Number of Families—*

## Transferred to Rehousing Schemes—

Prior to 31st Dec., 1929, ... ..	246
During 1930, ... ..	540
“Substituted” and transferred to Rehousing Schemes—	
Prior to 31st Dec., 1929, ... ..	38
During 1930, ... ..	98
Removed voluntarily or on account of non-payment of rent, &c.—	
Prior to 31st Dec., 1929, ... ..	41
During 1930, ... ..	129
Still to be provided for at 31st Dec., 1930, ... ..	46

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1,138

(e) THE GLASGOW (CALTON) IMPROVEMENT SCHEME, 1930.—This scheme received the official approval of the Department of Health for Scotland in January, 1931. The following table shows the number of houses represented and the number included in the scheme, as confirmed by the Department :—

As represented, ... ..	611	636	61	3	1,311
As confirmed, ... ..	606	618	61	3	1,288

Statements of the progress of the scheme will be shown in subsequent Annual Reports.

## CONDITIONS IN SLUM CLEARANCE REHOUSING SCHEMES.

House-to-house visitation in these schemes is undertaken by lady inspectors. At the beginning of the year 4,070 houses were under supervision, and at the end of the year this number had increased to 4,527 houses. The movement among the tenants during the year is shown in the following statement :—

Number of tenants in occupation at 31st December, 1929, as per Annual Report for 1929, ... ..	3,521
Number of tenants in occupation at 31st December, 1929, of schemes which were filling up or had been occupied for a short time only prior to the end of that year, and which were not included in the Annual Report for 1929, ... ..	549
Total number of tenants in occupation at 31st December, 1929, ...	4,070
Number of tenants obtaining entry during 1930, ... ..	855
Number of tenants evicted and left owing rent during 1930, 222	
Number of tenants removed voluntarily during 1930, ... 176	
	398
	457
Number of tenants in occupation at 31st December, 1930, ... ..	4,527

Records are kept by the lady inspectors to show the condition of the houses visited classified into the categories "clean," "fair," and "dirty." These records have been used to compile the following tables, which contrast the conditions of the houses at certain periods and for various groups of tenants.

Of the 4,527 tenants in occupation at the end of the year, 3,702 had held tenancy for the full year, while 825 obtained entry during the year.

In the following table the condition of the houses occupied by the 3,702 families is given as at the beginning and end of the year.

Condition at beginning of Year.	Condition at end of Year.				Group Percentage.
	Clean.	Fair.	Dirty.	Total.	
Clean, ... ..	2,697	158	3	2,858	77.2
Fair, ... ..	219	507	19	745	20.1
Dirty, ... ..	1	36	62	99	2.7
	2,917	701	84	3,702	—
Group percentage, ... ..	78.8	18.9	2.3	—	—

It will be seen that there has been a slight improvement in conditions generally, although some backsliding among certain tenants is also indicated. One hundred and fifty-eight tenants previously reported as "clean" were transferred to the "fair," and three to the "dirty" category; and 19 who had been classified as "fair" were transferred to the "dirty" category. As a set-off, 219 "fair" and one "dirty" had progressed sufficiently to be classified as "clean," and 36 "dirty" to be classified as "fair" at the end of the year.

Similar information is given for the 825 tenants who obtained entry during the year, and in respect of whom supervision was of shorter duration than that of the preceding group.

Condition at Date of Entry.	Condition at end of Year.				Group Percentage.
	Clean.	Fair.	Dirty.	Total.	
Clean, ... ..	325	14	2	341	41·3
Fair, ... ..	139	310	9	458	55·5
Dirty, ... ..	4	2	20	26	3·2
	468	326	31	825	—
Group percentage, ... ..	56·7	39·5	3·8	—	—

The improvement in this group is more marked, although the final condition falls short of the standard obtained by those in residence for the full year—56·7 per cent., as against 78·8 per cent. “clean”; 39·5 per cent., as against 18·9 per cent. “fair”; and 3·8 per cent., as against 2·3 per cent. “dirty.”

The following table gives the condition, prior to removal, of the houses occupied by tenants who were evicted or left owing rent, and by tenants removing voluntarily.

Condition at Date of Removal.	Tenants evicted during 1930.		Tenants removing voluntarily during 1930.	
	Number.	Group Percentage.	Number.	Group Percentage.
Clean, ... ..	120	54·1	133	75·6
Fair, ... ..	86	38·7	41	23·3
Dirty, ... ..	16	7·2	2	1·1
	222	100·0	176	100·0

It is interesting to note that the cleanliness of the evicted tenants was much below the average, although the condition of the houses of the tenants who removed voluntarily compared favourably with the standard of the previous groups.

## REHOUSING.

I desire again to emphasise the social aspect of housing enterprise, especially as regards rehousing operations. Management involves something more than the collection of rents and attention to repairs, and implies attention to human and social needs. As the result of experience and observation over the past few years, it can be affirmed that the majority of tenants will respond to efforts made to improve their environment, but the extent of the response depends on the degree of wise and helpful aid rendered by appropriate officers of the local authority. In Glasgow there is for this purpose a system of close co-operation between the Public Health Department and the City Improvements Department, responsible for the management of the new schemes. The former has undertaken, through specially delegated lady inspectors, the function of routine inspection, assistance, advice and general supervision, exercised in a variety of ways for the purpose of maintaining standards of occupancy at the highest possible level.



Reports are given in the succeeding pages dealing with methods and results obtained by a system which has passed beyond the experimental stage and has now become one of the most important and valuable measures yet undertaken in the public health interests of the poorer classes of the community.

Dr. W. C. Gunn, who has given special attention to this aspect of slum clearance and rehousing, contributes the following remarks based on a recent survey of rehousing schemes in the City :—

“The problem of rehousing is by no means solved when the tenants of uninhabitable properties are transferred from insanitary dwellings to new rehousing schemes. The new environment is strange to them, and they find that their lives have been revolutionised all at once. For one thing, housekeeping has become a much simpler problem. There is ample light, facilities for hot water, a total absence of dark recesses, which are all too familiar in the old houses and which lend themselves to the accumulation of rubbish, dirt, and vermin.

“Some years ago the standard of cleanliness in the rehousing schemes was not satisfactory in many instances. Added to the influence which the slums had exerted on the health and general physique of the housewife, they had also failed to educate her in what may be called house-sense, and the result of this was seen in the rapid deterioration of some of the new houses, and in the number which became infested with bugs. Accordingly, a system of inspection of the new houses was instituted, and the staff appointed for this duty is entirely female, some of whom are also trained nurses. At present there are nine inspectresses carrying out this duty, two of whom do nothing else, and the others have also duties connected with inspection of school children and houses outwith the rehousing schemes. Reports from the whole-time inspectresses have been included in the Annual Reports during the past few years, and appear elsewhere in this year's Annual Report. Their method of approaching this field of work is entirely advisory, and in the majority of cases the help and advice offered to the indifferent housewife has had the result of bringing about a better state of affairs in the household.

“During the early part of this year, a series of inspections in each of the rehousing schemes was made, and the following are the general impressions obtained.

“There is undoubtedly a very noticeable improvement in the standard of housekeeping maintained in all of the rehousing schemes. It was satisfactory to observe that in the oldest of them, namely, Logan Street in the south-side, Springfield Road in the east, and Hamiltonhill in the north, there are examples of housekeeping of a very high order.

“Out of a total of nearly 400 houses entered at random, bug infestation was found in about half a dozen instances only, and none of these cases was a gross example of what bug infestation can be even in the new houses. This is undoubtedly a definite evidence of progress. Another factor in the subjection of the bug has been the



abolition of the wooden picture rail and wooden skirting board from the construction of these houses, an improvement suggested to and carried out some time ago by the Director of Housing. The traffic in second-hand furniture, pictures, old bedboards, and other articles which are such a dangerous source of bug infestation has steadily diminished.

"Each new tenant, before he leaves his old house, has all his furniture and bedding disinfested by the Public Health Department, and advice is given by the sanitary inspector on how to prevent vermin. When the transfer has taken place, the inspectress visits the new tenant at once and carefully inspects the furniture, pictures, bedding, &c., again, and for a period she pays particular attention to this new tenant until she is satisfied that the occupancy is likely to be successful. Much of the success of the work of the inspectress depends on her method of supervision at this stage. A few prosecutions have had to be carried out to enforce the necessity for cleanliness and to prevent the whole tenement becoming bug infested, and each case was only taken up when all other methods failed. It may be pointed out that prosecutions are only taken with the greatest reluctance.

"A feature of the majority of the houses is the endless variety of decorations adopted. The papering of walls is not encouraged, although in the case of tenants who have their sense of housekeeping highly developed there is no objection to this, but it has been found over and over again that, where paper has been put on and bugs have got in, before the pest could be eradicated the paper had to be stripped from the wall, naturally to the great chagrin of the tenant. In all of the rehousing schemes, paint for the walls is used in a high proportion of the houses. Painting has its undoubted advantages, and it is not very costly. It has in many cases brought out the artistic sense of the tenant, and the results in many houses are most attractive. Although this high standard of housekeeping is not altogether due to the element of exchanged tenants as distinguished from the tenants from the slum areas, yet there is no doubt that exchanged tenants have set a good example in this respect.

"The percentage of unsatisfactory houses observed during the itinerary was certainly no more than 5 per cent. The dirty house is a peculiar problem in itself, and on entering there is experienced at once a feeling of being confronted with a number of insurmountable conditions, poverty, illness, mental inefficiency, and absence of the will to do better. Most of this type sooner or later leave the rehousing schemes and find their way back to the slums which still remain. This type will always keep the slums going. It is difficult to put a figure on this class, but I think one per cent. would fully cover it.

"Throughout the schemes it was generally found that the gas fire in the rooms was most unpopular and seldom used because of the cost. An impression gathered was that the standard of cooking has improved, and many are making full use of the ovens, heated by the living-room fire, for cooking generally. The washing boiler in the kitchenette has

been found to be a boon, but the cost of gas rather limits its use. Some of the boilers have been introduced without a ventilating flue through which the gas fumes can be carried off. This is to be deprecated, and should be remedied where existing, and avoided in future.

"On the whole, the cleansing of stairs and the care of staircase windows are good, but here and there in all the schemes there are tenements below the standard expected, and it is usually found that the occupants have originally come from the worst of the slums of the city, such as Richard Street, Muse Lane, and Lyon Street. It is understood that a clause is being inserted in the missive of letting to the effect that tenants are responsible for the cleansing of staircase windows.

"It may be added that in the itinerary acquaintance was being renewed with tenants well known in their slum homes, and the change was in most instances gratifying. The use of the baths in the houses is fairly general, just as general as in any other type of house in the city. The bathrooms are kept in splendid condition, and the old myth of coal being kept in the bath has long ago been exploded.

"Although poverty is very evident in many homes, and there may be very little furniture, yet a high standard of cleanliness is maintained, and the clean tenant has always an encouraging air of optimism about her. There are many examples of houses which have been almost completely furnished with furniture made at home, including home-made wireless installations, and there are home-made gramophones of excellent appearance. Sub-letting of rooms was met with in some instances. -Around the block houses in some of the schemes, satisfactory gardening efforts have been made, and in a few instances these are of a high order.

"In summing up, one can confidently say that the rehousing from the slums has been most successful from every point of view. A true picture of this can only be obtained from a comprehensive survey of all the schemes carried out in as short a space of time as possible."

### SUPERVISION OF REHOUSED FAMILIES.

The following report is contributed by Nurse Matheson, the first lady inspector to be appointed for the supervision of rehoused families from uninhabitable houses. The report refers to the Eastern Division of the City. The general principles and results apply generally to the other City divisions:—

All the houses in the slum clearance schemes in the city are classed as clean, fair, and dirty, according to the standard of cleanliness maintained by the tenant.

During the year 1930 the houses in the following schemes (except the clean houses in Duke Street and Haghill Schemes) were under my supervision, viz. :—Newbank 358, Springfield Road 308, Garvald Street 24, Burgher Street 12, Westmuir Street 36, Parkhead 96, Duke Street (fair and dirty) 26, Haghill (fair and dirty) 42, Janefield Street 120, and Quarrybrae 130 (occupied at present)—total, 1,152 houses.

Houses in the clean class are visited once every three months at least, and those in the other two classes at least every month, except new tenants in the latest schemes,

where a three-weekly call is made. These frequent visits are necessary in the latest schemes to impress on the new tenants the standard of cleanliness required, particularly with regard to bathrooms, stairs, stair windows, and proper ventilation.

Since the Glasgow Order Confirmation Act, 1929, came into force, the dirty tenants are keeping their houses much cleaner. With a few exceptions leniency has been shown to defaulters, especially in the case of dirty uncovered floors, which are very difficult to keep clean in wet weather if there are many children, as is often the case. There is a house in one of the schemes, which, if visited by a stranger, would be called dirty, yet some allowance must be made for this mother, who is unhealthy, cooks for thirteen, and keeps her five beds in perfect condition.

The following table shows the number and condition of houses completed and occupied by December, 1930.

Scheme.	1928.			1929.			1930.		
	Clean.	Fair.	Dirty.	Clean.	Fair.	Dirty.	Clean.	Fair.	Dirty.
Newbank, ...	170	61	17	289	59	10	316	35	7
Springfield Road, ...	231	64	13	221	72	15	220	75	13
Garvald Street, ...	15	6	3	13	9	2	13	9	2
Burgher Street, ...	Unoccupied.			7	5	—	9	3	—
Westmuir Street, ...	"			24	12	—	25	11	—
Parkhead, ...	"			63	27	6	82	20	4
Duke Street, ...	"			191	19	6	190	21	5
Haghill ...	"			—	—	—	276	35	7
Janefield Street, ...	"			—	—	—	49	58	11

The standard of cleanliness is improving slightly, but it is to be remembered that new tenants are constantly entering, and until these are trained they tend to keep down the normal standard.

*Intermediate Schemes.*—In June, 1930, I visited 90 houses in an intermediate scheme in the Eastern Division. Of these houses, 75 were found clean, tidy, well furnished and satisfactory in every way; 11 were fair; and 4 were dirty. Another visit was paid to some of the fair class and the four dirty houses in February of this year. In the dirty houses, two of the tenants had left, one was clean, and the fourth was as dirty as any in the slum clearance schemes. The walls were all very dirty, and a line was given to obtain colouring, as the tenant could not afford to buy it. Some of the tenants in this intermediate scheme came from houses where the rents were much lower than at present. Complaint is general that rents are too high, and that gas fires are unsatisfactory, likewise the gas stoves which have to be used for cooking, as the interior grates in the living room cannot be used for this purpose.

*Bugs.*—In the various schemes the following number of houses were found to have bugs :—1928, 157 houses; 1927, 187 houses; and 1930, 96 houses. During last year a considerable decrease in the number of bug-infested houses was noticeable. This decrease was probably due to the extra attention given by tenants to picture rails, the frequent use of paint instead of wallpaper, and fewer lodgers bringing bug-infested furniture to the houses.

In the more recent schemes there are no wooden picture rails, and the skirting board is of cement. So far, no bugs have been found on the walls, but in three cases chairs were found infested. It will be more difficult to discover bugs in these new houses, as the chief breeding haunts, the wooden picture rails, are absent.

During 1930 the following changes in the schemes took place :—

	Clean.	Fair.	Dirty.
Left voluntarily, ...	39	19	1
Exchanged within schemes, ...	21	4	1
Evicted, ...	35	13	3

The general reasons given for leaving were that the houses were too far from the works, the rents too high, and the houses too cold. In a few instances, mothers have died, and fathers and children have gone to live with relatives; in two cases there were quarrels with neighbours, and in another case objection was taken to frequent visits because the house was kept dirty. Three tenants removed to England.

## NOTES ON INDIVIDUAL SCHEMES.

*Newbank.*—There is a marked improvement here, even in the case of dirty houses. A large number of the clean houses are occupied by unemployed people. There is little or no furniture, the bare floors are scrubbed, and the walls are coloured with material provided by the Department. The tenants pay attention to the stairs and the stair walls. The gardens are cultivated in the block houses, but not in the tenements. The tenants appear contented, and the only complaint is the gas fires, especially in one or two ground flat houses which are inclined to be damp in winter. One woman with a large family says that every six weeks she pays £2 10s. (minus a rebate of 15s.) for gas. This sum is a big drain on her resources.

*Springfield Road.*—There is an all-round improvement in this scheme, even in Lily Street, which is the least satisfactory and in which, without constant supervision, the houses would revert to slum conditions, especially as regards stairs and stair windows. A stranger would probably form a wrong impression judging from the outside, as, in most cases, the interiors are kept quite satisfactorily. The block houses give little trouble; most of them are well furnished, and the gardens are beautifully kept. Three of the highest awards came to this scheme last year from the *Daily Record* Gardening Competition. In the tenement houses the gardens are generally neglected. During 1929, 92 houses were bug infested, but this year only 45 were found to have bugs. Most of the houses were cleaned with carbolic by the tenants, and then painted if possible. With attention, this scheme should rise to the standard of the others.

*Garvald Street.*—The effects of former environment are noticeable here. The people came mostly from Richard Street, a once noted slum building. It is with difficulty that the houses are kept up to anything like the standard. The one redeeming point is that the house which was formerly the dirtiest is now usually clean. One house has been transferred from clean to dirty. This set-back was due to the mother's illness, during which the father had to look after six children under ten years, including a baby a few months old.

*Westmuir Street.*—Unlike most of the schemes, it is hemmed in between buildings, but looks well, as the windows are nicely curtained. Twelve of these houses (two adjoining closes) are occupied in every case by unemployed people, only three of whom keep their houses clean. There is a downward tendency, as the mothers complain of losing heart because of the struggle to make ends meet.

*Parkhead.*—This was occupied during 1929, and has given satisfaction, considering that the people removed from Coalhill and Society Streets, two very congested and dirty streets. Two of the dirty tenants are discouraging because of indifferent mothers, but the other two are likely to improve. The gardens are not being attended to, the excuse being that everything planted is stolen, as they are facing a main thoroughfare.

*Duke Street.*—One hundred and ninety out of 216 houses are clean, and are visited by another nurse inspector; 20 fair and four dirty come under my supervision. Six fair houses were transferred as clean during 1929, and have remained so. Three of the four dirty houses are at times clean.

*Haghill Scheme.*—This scheme consists of 318 houses, 42 of which are unsatisfactory. It was completed and occupied during 1930. The majority of the 42 houses came under my care at the latter end of the year. The fair and dirty houses will require a lot of attention, as some of them have a very low standard of cleanliness.

The newest schemes, that is, Quarrybrae and Janefield, give the impression that frequent visits paid here will not be wasted. Already there is a marked improvement both in the condition of the houses and in the health of the people, especially the children. Remarks are often heard that before coming there the children would hardly take food, but now they can't be kept in it. The tenants are appreciating their new homes, and wish they had been there years before.



## PROGRESS OF SCHOOL CHILDREN IN REHOUSING SCHEMES.

I am again indebted to the keen personal interest taken in the children in rehousing schemes by the headmasters and teachers in the various schools where these children attend. The headmasters of certain schools in the East End have again taken the trouble to furnish reports, which may be taken to illustrate the general trend among rehoused children generally. Their observations cover the period from June, 1930, to June, 1931.

(1) Mr. Jamieson, Headmaster of Newlands Public School, Springfield Road, reports as follows :—"I am pleased to state that in the majority of cases improvement in appearance and in intelligence, as well as in nutrition, has followed from the change of the children to more healthy surroundings. This is particularly noticeable among the older pupils, who have now a higher ideal in life and cultivate a sense of self-respect. In some cases, owing to financial circumstances and the general economic depression, there is little improvement, and no doubt this would disappear on the return of more prosperous times."

The Headmaster of Bluevale School reports as follows :—"I have pleasure in reporting that returns from the teachers of this school indicate a further advancement in respect of health, &c., in the rehoused children. In cleanliness there is reached a good level throughout the school. Reports under nutrition range from good to fairly good—in the latter cases in young classes. Intelligence shows returns from good to average with three classes (young pupils) showing fairly good. Discipline troubles are found only among the very young children, and these are entirely due to lack of control of the pupils who suffer from defective home training. Marked improvement is shown as such pupils travel up the school. Clothing is indicated as showing least improvement, though a fair number of pupils are provided with clothing by the Public Assistance Department. Punctuality is very good, with a few exceptions among the young pupils—again traceable to the home and again improving after a few months at school. Precocity is not at all marked, the pupils being normal in this respect. Sociability is returned as from very good to average, there being no evidence of ostracism on the one side or withdrawal on the other. It must be noted, however, that in several classes the bulk of 'infectious' and 'clinic' cases is found among the pupils from the slum clearance schemes. The numbers from these schemes are :—boys, 212 ; girls, 188 ; total, 400."

(2) Mr. Rintoul, Headmaster of Springfield Public School, has sent a full and striking report, which contains a painstaking analysis of the progress of the children. He states :—"It will be noticeable from the tables that the child in the rehousing scheme now compares much more favourably with the other children in the same area. Clothing (clothes, underclothing, boots) is provided in all necessitous cases by the Public Assistance Department, and this is very much of the same kind as is provided by the parents of the other children. Food is also supplied wherever necessary, and as a result there is little



perceptible difference between the slum child and the other so far as clothing and nutrition are concerned. This physical well-being reacts mentally, and it will be noticed that in intelligence, discipline, and precocity, there is not much to choose between the two classes of children."

The tables referred to contain an analysis of the 1,500 children in the school, in which comparison is made between the ordinary pupils and those from the rehousing schemes in each class. The tables, which cover the children in eight infant classes, eight junior classes, and 14 senior classes, show clearly that the differences between the two groups of children are slight. The full tables are not given here, but the following summary is quoted.

The method of construction of the tables was as follows:—Each class was divided into two groups—slum children and others. A standard of 10 was taken for each of certain mental and physical qualities, e.g., nutrition, intelligence, discipline, and the total marks gained by each group divided by the number of children in the group. The summary given below is obtained by treating the classes as individuals. That is to say, the marks gained by each group in each class in the senior, junior, and infant sections are added, and the total divided by the number of classes in each of these three sections.

				Senior.		Junior.		Infants.	
				S	O	S	O	S	O
Cleanliness,	...	...	...	7.4	8.0	7.3	7.8	6.8	7.8
Nutrition,	...	...	...	7.6	8.3	7.1	8.0	7.2	7.9
Intelligence,	...	...	...	6.8	7.7	7.2	7.6	6.7	8.1
Discipline,	...	...	...	9.0	9.0	8.4	8.7	8.3	8.7
Clothing, ...	...	...	...	7.1	7.8	6.5	7.7	6.9	8.4
Punctuality,	...	...	...	8.7	9.7	8.0	8.0	7.5	8.3
Precocity,	...	...	...	5.0	5.3	4.6	4.7	0.2	1.0
Sociability,	...	...	...	8.3	8.7	8.0	8.0	7.1	8.1
				59.9	64.5	57.1	60.5	50.7	58.3

S = Slum. O = Others.

Mr. Falconer, Headmaster of London Road School, where there are about 150 from the rehousing schemes, reports in the following terms:—"Cleanliness.—Improvement noticeable in nearly all cases. *Sociability*.—After close observation, particularly in the latest scheme in Dalriada Street, Kinloch Street, and Janefield Street, distinct advance is evident, especially with the younger children between five and seven. *Intelligence*.—Practically all the children were from one to two years behind when they entered this school, and were mostly dull and backward. I should say that 50 per cent. of them have noticeably improved in general intelligence."

The report by Mr. John Donaghy, Headmaster of St. Michael's School, concerns 495 pupils. He states that results on the whole are very favourable, indeed very satisfactory, showing that nine-tenths of such children respond favourably to their improved conditions. Of the 495 pupils, the numbers which were not quite satisfactory were as follows:—cleanliness, 18; nutrition, 15; intelligence, 59; discipline, 1; clothing, 16; punctuality, 33.

Further details in connection with this report are being worked out, in which the heights and weights of all these pupils are being compared with the standard figures for the city.

When taken in conjunction with the satisfactory reports on the standard of cleanliness which is being maintained in the houses of the slum clearance rehousing schemes, the progress of the children is a further indication that the results of slum clearance in Glasgow have been satisfactory, and that slum clearance is now well beyond the experimental stage, having attained an objective which was scarcely hoped for five years ago.

### INTERMEDIATE HOUSES.

Mr. Patterson, of the Northern Division, reports that opportunity was taken during the summer months to make an inspection of houses in Ruchill, Possilpark, and Balornock Schemes, and under-noted is a statement with regard to the conditions in which they were found :—

Number of House inspected.	Clean.	Fair.	Dirty.
600	542	54	4

The occupiers of these houses are of a much better type than those in slum clearance rehousing schemes, and the general standard of cleanliness is much higher. It would appear that the same process of ejecting undesirable tenants which has been remarked on in connection with slum clearance schemes is also going on in intermediate schemes.

### REHOUSING OF TUBERCULOUS FAMILIES.

In January, 1929, the Housing Committee of the Corporation resolved that 10 per cent of the Intermediate type of houses should be allocated to families where a tuberculous person had to share a sleeping-room with children or adolescents subject to the general letting conditions of this type of house.

Recommendations are made from time to time by this department to the General Manager of the City Improvements Department, and houses are allocated as vacancies occur. During the year 1930 352 recommendations were made, and the following table shows the action taken in connection with them :—

Allotted houses, ... ..	29
Waiting for vacancies in present schemes, or in schemes in course of erection, ... ..	88
Waiting for cheaper type of Intermediate house, ... ..	10
<i>Negotiations with Improvements Department not completed—</i>	
Sent to look at house but did not call back, ... ..	2
Unsatisfactory reference from factor, ... ..	4
Unable to pay rental of Intermediate Scheme, ... ..	5
Not eligible, ... ..	1
	12
<i>No response by applicant to postcard from City Improvements Department—</i>	
Reason unknown, ... ..	28
Gone away and left no address, ... ..	14
	42
<i>Do not now wish a Corporation House—</i>	
Reason not stated, ... ..	3
Suited elsewhere, ... ..	1
Patient dead, ... ..	1
	5
<i>Improvements Department still to report on recommendations, ... ..</i>	166
	<u>352</u>

With regard to recommendations made during 1929, the Manager of the City Improvements Department reported the following results during 1930 :—

Recommendations during 1929, ... ..	462
Allotted houses during 1929,... ..	71
No further action to be taken, ... ..	87
	<hr/> 158
Waiting for houses at 1st January, 1930, ... ..	304
Allotted houses during 1930,... ..	48
<i>No response by applicant to postcard from City Improvements Department—</i>	
Reason unknown, ... ..	4
Gone away and left no address, ... ..	2
	<hr/> 6
<i>Do not now wish Corporation Houses—</i>	
Reason not stated, ... ..	12
Suited elsewhere,... ..	1
Patient dead, ... ..	6
	<hr/> 19
	<hr/> 73
Still to be suited at 31st December, 1930, ... ..	231

### PREVENTION OF BUG INFESTATION.

In the reports for the past three years some special notes have been given in this section on bugs and and bug infestation of houses. Routine measures are now taken to prevent, as far as possible, the transfer of the vermin when slum tenants are rehoused. These measures are dealt with in a leaflet which has been prepared for issue in connection with the nuisance on board ships, and this leaflet is included in Section VII. on the Port Local Authority, page 211.

### HOUSING (SCOTLAND) ACT, 1925.

For the purpose of Section 3 of the above Act, 7,879 inspections were made during the year. The details as to inspections, notices issued, and defects found are as follows :—

Division.	Inspections.	Notices Issued.	No. of Defects.	No. of Houses Affected.
Central, ... ..	1,783	60	228	129
Northern, ... ..	1,839	138	327	220
Eastern, ... ..	2,968	120	398	229
South-Eastern, ... ..	1,136	78	384	231
South-Western, ... ..	153	1	2	1
	<hr/> 7,879	<hr/> 397	<hr/> 1,339	<hr/> 810

Failure to implement the statutory notices occurred in 12 instances, and in respect of these authority was obtained to remedy the defects complained of, and to charge the owner with the cost of repairs. The actual work of repair was carried out by the Master of Works on behalf of the department, and the following table summarises the cases dealt with according to divisions :—

## SENT TO MASTER OF WORKS TO EXECUTE REPAIRS.

Division.	Notices Issued.	No. of Defects.	No. of Houses Affected.
Central, ... ..	1	2	—
Northern, ... ..	4	16	9
Eastern, ... ..	7	36	22
South-Eastern, ... ..	—	—	—
South-Western, ... ..	—	—	—
	12	54	31

## CLOSING ORDERS.

For the purposes of Section 8 of the 1925 Act and of Section 16 of the 1930 Act, 937 inspections were made. The following table shows the position as at 31st December, 1930, of properties represented in the years 1928 and 1929 in respect of which further action was taken during the year, and of properties represented during 1930, distinguishing between those dealt with under the 1925 Act and the 1930 Act.

	Number of Houses.				Number of Families.			Remarks.
	Total.	Demolished.	Closed but not demolished.	Still Occupied.	Transferred to Rehousing Schemes.	Substituted for Families transferred	Removed Elsewhere.	
<i>Properties represented in 1928—</i>								
34 Parkhouse Lane (F.L.), 22	—	—	22	—	10	2	3	7 houses unoccupied at time of representation.
<i>Properties represented in 1929—</i>								
Hopehill Road, ...	2	—	2	—	—	—	2	Basement houses.
Coustonhill Street,	1	—	1	—	1	—	—	Now occupied as business premises.
2 Tollcross Road (B.L.), ...	4	—	4	—	4	—	—	Converted into business premises.
Green Lane, Pollokshaws, ...	1	1	—	—	—	—	1	
22 Maryhill Road,	6	6	—	—	6	—	—	
Millroad Street (B.L.), ...	1	—	1	—	—	—	1	Converted into business premises.
Rutherford Lane, ...	10	—	10	—	9	—	1	
" " " " " "	8	—	8	—	7	—	1	
Rolland Street, ...	2	—	2	—	2	—	—	Basement houses.
" " " " " "	2	—	2	—	2	—	—	" "
" " " " " "	2	—	2	—	2	—	—	" "
" " " " " "	2	—	2	—	2	—	—	" "
0 Garngad Rd. (1st B.L.),...	24	24	—	—	1	15	8	
0 " " " (2nd B.L.),	6	6	—	—	1	3	2	
Cawdercuilt, Blackhill Rd.	5	—	4	1	—	—	—	4 houses unoccupied at time of representation.
4 St. James Road (B.L.), ...	8	8	—	—	3	—	2	3 houses unoccupied at time of representation.
15, 17, and 19 Lilac Place,	50	50	—	—	31	4	15	Closed after service of notice by Master of Works under Section 3.
7 Centre Street, ...	4	—	3	1	2	—	1	Closed under arrangement with Owners.

	Number of Houses.				Number of Families.			Remarks.
	Total.	Demolished.	Closed but not demolished.	Still Occupied	Transferred to Rehousing Schemes.	Substituted for Families transferred.	Removed elsewhere.	
<i>Properties represented in 1930</i> (under 1925 Act)—								
579 Garscube Road (F.L.), ...	2	—	2	—	—	—	2	Basement houses.
7A Burnside Street, (B.L.), ...	2	—	2	—	1	—	1	Ground flat houses, 4-storey tenement.
59 Glebe Street, (F.L.), ...	6	—	6	—	5	1	—	
59 " " (B.L.), ...	5	—	5	—	3	2	—	
1694B Maryhill Road (F.L.),	1	—	1	—	1	—	—	Ground flat house 2-storey tenement
9 Abercromby Street (So. B.L.),	4	—	4	—	2	—	2	
9 " " (North B.L.),	4	—	4	—	2	—	2	
23-25 Bankier Street (F.L.),	7	—	7	—	—	—	7	
210 Tollcross Road (B.L.), ...	10	—	10	—	7	—	3	
24-28 Dalness Street (F.L.),	4	4	—	—	4	—	—	
41-43 Acorn Street (F.L.), ...	8	8	—	—	2	—	6	
37 " " (F.L.),	7	7	—	—	5	—	2	
51-53 Megan Street (F.L.), ...	15	—	—	15	—	—	—	
101-103 Coburg Street (F.L.),	14	14	—	—	6	—	8	
107 " " (F.L.),	15	15	—	—	8	—	7	
111-113-115 " " (F.L.),	8	8	—	—	3	—	5	
117 " " (F.L.),	8	8	—	—	7	—	1	
	120	64	41	15	56	3	46	
<i>Properties represented in 1930</i> (under 1930 Act)—								
4 Warroch Street (F.L.), ...	2	—	—	2	—	—	—	Basement houses.
85 Stobcross Street (F.L.), ...	3	—	—	3	—	—	—	" "
3-5 Whitehall Street (F.L.),	3	—	—	3	—	—	—	" "
38 Hydepark Street (F.L.),	2	—	—	2	—	—	—	" "
92 William Street (F.L.), ...	1	—	—	1	—	—	—	" "
3 Cadzow Street (F.L.), ...	7	—	—	7	—	—	—	" "
5-9 Richard Street (F.L.), ...	4	—	—	4	—	—	—	" "
9 Ruchill Street (F.L.), ...	1	—	1	—	1	—	—	Ground flat house 4-storey tenement; 2 of the 13 houses unoccupied a time of representation.
94 High Craighall Road (F.L.),	17	13	—	—	8	2	1	2 houses rendered habitable and converted into business premises.
6-10 Kelvinside Avenue (F.L.),	3	—	1	—	—	—	1	Basement houses 2 rendered habitable.
12-14 Kelvinside Avenue (F.L.),	4	—	—	—	—	—	—	Basement houses rendered habitable.
26 Kelvinside Avenue (F.L.),	2	—	1	1	—	—	1	Basement houses.
3-5 Paul Street (F.L.), ...	4	—	4	—	1	—	3	" "
1624 Maryhill Road (F.L.),	2	—	2	—	1	—	—	1 house unoccupied at time of representation.
16 Acorn Street (B.L.), ...	8	—	—	8	—	—	—	
11, 17, 23, 29 Falfield St. (F.L.),	64	—	1	63	—	—	—	1 house unoccupied at time of representation.
	127	13	10	94	11	2	6	



## RENT AND MORTGAGE INTEREST RESTRICTIONS ACTS, 1920 AND 1923.

*Applications for Certificates by Tenants.*—During the year 54 applications for certificates, in terms of Section 2 (2) of the principal Act, were received, compared with 13 for 1929. Of these, 1 was refused and 53 granted, 44 of the latter being in respect that the houses affected were not in all respects reasonably fit for human habitation, and 9 in respect that the houses were not in a reasonable state of repair.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for each year since the Act came into operation:—

### GLASGOW, 1930—APPLICATIONS FOR CERTIFICATES UNDER SECTION (2) OF THE INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1920.

Division.				Granted in respect that Houses were	
				(1) Not in all respects reasonably fit for human habitation.	(2) Not in a reason- able state of repair.
Central, ... ..	...	...	—	2	—
Northern, ... ..	...	...	1	—	1
Eastern, ... ..	...	...	—	39	6
South-Eastern, ... ..	...	...	—	3	—
South-Western, ... ..	...	...	—	—	2
City, ... ..	...	...	1	44	9
				<u>53</u>	
1920 (Oct.-Dec.) ... ..	...	...	147	263	459
1921, ... ..	...	...	97	154	180
1922, ... ..	...	...	10	2	8
1923, ... ..	...	...	75	180	160
1924, ... ..	...	...	21	83	69
1925, ... ..	...	...	16	15	28
1926, ... ..	...	...	9	28	12
1927, ... ..	...	...	9	30	22
1928, ... ..	...	...	8	89	20
1929, ... ..	...	...	2	9	2
1930, ... ..	...	...	1	44	9

*Applications for Reports by House Factors and Owners.*—In Section 5 (2) of the 1923 Act it is provided that where a certificate has been issued by the Sanitary Authority in accordance with the provisions of Section 2 (2) of the principal Act of 1920, and the house factor or owner afterwards executes the repairs required to put the house into a reasonable state of repair, he shall be entitled to receive a report to that effect on making application to the Sanitary Authority, and on payment of a fee of one shilling.

No such application was received during the year, but the following summary shows the number of applications received in previous years :—

APPLICATIONS FOR REPORTS BY HOUSE FACTORS OR OWNERS UNDER SECTION  
5 (2) RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1923.

						Granted.	Refused.
1923, ...	...	...	...	...	...	6	—
1924, ...	...	...	...	...	...	29	1
1925, ...	...	...	...	...	...	5	—
1926, ...	...	...	...	...	...	2	—
1927, ...	...	...	...	...	...	2	—
1928, ...	...	...	...	...	...	—	2
1929, ...	...	...	...	...	...	2	—
1930, ...	...	...	...	...	...	—	—

### TENTS, VANS, AND SHEDS.

Reference was made in the Report for last year to additional powers granted to the Corporation for the control of sites used for the accommodation of tents, vans, and sheds, &c. The following are the bye-laws approved by the committee on 7th March, 1930, and subsequently authorised by the Corporation :—

1. The following words and expressions in these bye-laws have, unless there be something in the subject or context repugnant to such construction, the meanings hereby assigned to them, that is to say :—

“ City ” means the City and Royal Burgh of Glasgow.

“ Corporation ” means the Corporation of the City of Glasgow.

2. The area to be allotted to any tent, van, shed, or similar structure used or intended to be used for human habitation by the person letting or using or permitting to be used any land within the city for occupation by any such tent, van, shed, or similar structure shall not be less than one hundred square yards, and each such tent, van, shed, or similar structure shall be so placed on said land that the distance between it and any other tent, van, shed, or similar structure or between it and any house, wall, or building, shall not be less than ten feet. The total number of such tents, vans, sheds and similar structures shall in no case exceed the total number of complete areas of one hundred square yards within such land.

3. Any person offending against any of these bye-laws shall be guilty of an offence and be liable on summary conviction to a penalty not exceeding the sum of five pounds for each offence, and in the case of a continuing offence to a further penalty not exceeding forty shillings for each day after written notice of the offence from the Corporation during which such offence continues, provided that the Magistrate before whom the penalty is sought to be recovered may order the whole or part only of such penalty to be paid or may remit the whole penalty.

## SECTION IX.

## BACTERIOLOGICAL LABORATORY.

By DR. W. R. WISEMAN, City Bacteriologist.

In the essential features of its nature and range the work of the laboratory in 1930 is similar to that of previous years. As may be expected in the case of a developing science like bacteriology, the methods and technique of the application of tests in various phases of the work are constantly subject to improvement. Fresh suggestions by workers in the science as recorded in the current literature require to be kept in view, and they are, as far as is possible or expedient, put to trial in the laboratory with a view to their adoption in practice, if desirable.

The kinds of material handled in the laboratory and the tests which are applied to them are best appreciated in the first instance by a perusal of the Summary appended to this report, fuller details being available in the main statement. Although the total number of examinations made during 1930, namely 39,876, exceeds by about 5,500 the highest number previously overtaken in the laboratory (in 1927), it is found that the excess is due largely, but not altogether, to materials that fluctuate in amount, such as those from diphtheria cases and contacts (as in 1927) and from enterica cases and contacts. These classes of material provided 3,960 more examinations than in 1929.

Special work was instituted during the year in the bacteriological study of diphtheria, work covering recent methods of applying the biological test for virulence together with the differential cultural features of the diphtheria bacillus and allied organisms. Though a statement of all that this work implies cannot suitably form part of this report, it should be said that the application of this study is having a very beneficial effect upon this side of the work of the laboratory. When pursued further it may also yield useful information concerning the distribution of the members of this group of organisms—the *Corynebacteria*—in the human body, both in health and disease.

## DIPHTHERIA.

The total number of swabs examined for the presence of the diphtheria bacillus was 11,423. The sources of these are divisible into three categories, (1) cases where there is ground for suspecting the disease, (2) contacts of persons who have been in the vicinity of a known case, and (3) children who are examined prior to admission to the Corporation Country Homes. These last are termed pre-admission examinations.

(1) *Suspected Cases*.—During the year, 8,736 swabs were reported upon in respect of diphtheria. Positive results were got in 1,332 of these, or 15·2 per cent. This corresponds to 14·8 per cent. positives in 1,074 swabs in 1929.

(2) *Contacts*.—The large total of 2,133 examinations of contacts is due to the fact that several large institutions required extensive and detailed scrutiny.

The sources of these specimens were as follows:—

	Swabs.	Positive.	Per cent. Positive.
119 households, ... ..	336	29	8·6
11 schools, ... ..	709	18	2·5
3 hospitals, ... ..	207	17	8·2
2 reception houses, ... ..	43	5	11·6
1 children's home, ... ..	56	1	1·8
2 day nurseries, ... ..	106	5	4·7
1 military barracks, ... ..	3	—	—
1 prison, ... ..	631	24	3·8
1 tenement ... ..	42	12	28·5
	<hr/> 2,133	<hr/> 111	<hr/> 5·2

The tale told by the tenement in this list is striking.

(3) *Pre-admission Examinations*.—522 swabs were examined for the Health Department and 32 for practitioners. The diphtheria bacillus and bacilli resembling it were found in 14 instances. See under *Biological Tests*.

*Biological and Cultural Tests*.—These were tests for virulence and for identity of the organism. 119 swabs were so tested, of which 115 were by animal experiment. 53 of those 115 yielded a virulent organism, i.e., 46 per cent. The materials were as follows:—

	Number tested.	Virulent.
(a) Pre-admission swabs, ... ..	10	1
(b) Nasal swabs, ... ..	52	33
(c) Throat swabs, ... ..	38	15
(d) Ear swabs, ... ..	17	4
(e) Eye swabs, ... ..	1	—
(f) Vaginal swabs, ... ..	1	—
	<hr/> 119	<hr/> 53

(a) *Pre-admission Swabs*.—In March, 1930, a close scrutiny of the identity and virulence of the diphtheria-like organisms occurring in these swabs was begun. Of the 10 examined in this way (out of 14 in above statement) 4 were *B. diphtheriæ* and only 1 was virulent. If the 4 swabs received prior to March had been examined in this way, the yield could only have been at most 5 virulent organisms out of 554 swabs, and probably fewer.

(d) *Ear Swabs*.—An investigation was initiated by the Bacteriologist into the bacteriology of aural discharges in hospital patients with

special reference to the occurrence of the diphtheria bacillus. This is a subject that calls for extension of observations, relatively little work having been done upon it. We were only able to investigate 17 cases, but the results were both interesting and important. Virulent diphtheria bacilli were found in as many as 4 cases, and short references to these will suffice at present:—

Case 1—A case of measles. Ears started to discharge about ten days after admission. No other signs of diphtheritic infection and not known to have been exposed to it.

Case 2—Admitted with diphtheria. Had left otitis media on admission.

Case 3—Swab of discharge from chronic otorrhœa taken during routine swabbing of class in school where diphtheria had occurred. Swabs of throat and nose of this child were negative.

Case 4—Swab from ulcer of outer part of external ear (pinna). No ear discharge at any time. Had recently been in hospital with scarlet fever. Hæmolytic streptococci found along with virulent *B. diphtheriæ* in the cutaneous lesion.

Owing to the nature of these four cases and their importance in the science of the subject it is necessary to state that the bacilli in each case gave the fermentative reactions of *Bacillus diphtheriæ* and that the test animals along with their antitoxin controls gave unequivocal results.

### ENTERICA GROUP.

Specimens of blood for the diagnosis of typhoid and paratyphoid infections by means of agglutination tests numbered 349, and were submitted from 270 patients and 79 contacts. It is satisfactory to note the continued fall in the use of the capillary tube for this test, there being only 13 per cent. of specimens submitted in this way in 1930 compared with 36 per cent. in the previous year. Typhoid infection was found in 18 of these cases and paratyphoid B in 31 cases. 198 were negative while 23 were indefinite owing to previous anti-enterica inoculation or unsuitable period in the disease.

Examinations to the number of 1,162 for the presence of the infecting organisms of this group were made of specimens of fæces and urine from 418 suspected cases, convalescents and contacts—fæces 595, urines 567. The typhoid bacillus was found in 21 cases (fæces 22 times and urine 8 times). The paratyphoid B bacillus was found in 58 cases, being cultivated from fæces on 97 occasions and from urine on 40 occasions. As regards 7 of these typhoids, 3 were contact positives and 4 were carriers (3 of whom had a history of typhoid fever). Of the positive paratyphoids 9 were examined as contacts merely. They became clear, two of them after some months. One paratyphoid case diagnosed in July, 1930, is still positive after nine months. The above diagnoses have reference to isolated cases, there being no outbreak due to these organisms in 1930.



## DYSENTERY AND FOOD POISONING.

There was no outbreak of dysentery in the city in 1930, although there was a group of 10 suspected cases in one ward of one of the city hospitals. In 5 of these the dysentery bacillus of Sonne was found. The laboratory dealt altogether with materials from 195 persons. This work involved 289 examinations of fæces, this number including the usual repeat examinations for clearance. The sources of the material and the findings are seen in the following table:—

	Total.	B. Flexner.	B. Sonne.	E. histolytica.
Practitioners, ...	54	7	7	3
M.O.H. (suspected cases), ...	33	—	9	3
M.O.H. (contacts), ...	43	—	—	—
Corporation hospitals ...	159	15	13	—
	<u>289</u>	<u>22</u>	<u>29</u>	<u>6</u>

With regard to food poisoning, four persons were found to be suffering from infection by organisms that give rise to this condition. In three cases the organism was *Bacillus ærtrycke*, while the fourth case was due to *B. enteritidis*, Gärtner. A note on this last case is made later in this report. The organisms were not found in foodstuffs, of which 18 samples were examined in connection with this type of illness.

## VENEREAL DISEASES.

*Wassermann Test.*—Method No. 1 of the Medical Research Committee's Report continues to be the method used in this laboratory. During the year, 11,722 specimens were subjected to the test. Of these 11,640 were specimens of blood and 82 were cerebro-spinal fluids. 4,667 were duplicate specimens from patients under treatment.

The sources of the specimens were as follows:—

- 1,746 were received from city practitioners.
- 4,667 were received from institutions.
- 4,212 were received from Public Health Department.
- 1,097 were received from Local Authorities under special arrangement.

The percentage positive rate for specimens sent in for diagnosis was 19·2, while that for specimens sent from cases undergoing treatment was 38·5. The corresponding percentages for the year 1929 were 19·2 and 46·0, the total number of examinations being 11,703. In the case of 33 specimens of blood the result of the test could not be reported owing to technical difficulties connected with hæmolysis (25), anti-complementary action (1), and insufficient serum (57). From patients sent to the laboratory three specimens of blood were taken for the test.

*Kahn Test.*—During the year the Kahn Test was performed on routine sera from patients attending the Venereal Disease Dispensaries for the treatment of gonorrhœa only, as well as from persons attending ante-natal clinics and the Clinic for the Blind. 2,952 specimens of blood came under this test, 814 from gonorrhœa cases, 1,749 from ante-natal patients, and 389 from persons attending the Clinic for the

Blind. The corresponding positive percentages were 4·9, 2·8, and 11·5.

It may be noted that no case giving a positive Kahn result is put an antisyphilitic treatment without first having had the Kahn result confirmed by a Wassermann Test. In no case did a Khan reading of at least two plus (++) give a negative Wassermann reaction. A one plus (+) Kahn reading may, however, be a negative in the Wasserman test.

*Microscopical Examination for Treponema pallidum.*—Examinations were made of 11 specimens for the presence of this organism. Of these one was positive. Considerable care is necessary in the preparation of specimens for this examination.

*Microscopical Examination for Gonococcus.*—During the year 1,420 specimens from cases, other than ophthalmia neonatorum, were examined for the gonococcus. These were submitted from city practitioners (627), institutions (6), Public Health Department (765), and other Local Authorities (22). The specimens for diagnosis gave a positive percentage of 20·2, while those from patients undergoing treatment gave a corresponding figure of 7·4.

#### OPHTHALMIA NEONATORUM.

Specimens of exudate from the eyes of 1,118 suspected cases of ophthalmia neonatorum gave the following results:—

Specimens from				Number.	Positive.
Medical practitioners,	...	...	...	34	7
Medical Officer of Health,	...	...	...	1,084	123

In 83 instances the material was reported as being insufficient. The positive results are those in which the gonococcus was present. Since repeated examinations are commonly made to test the results of treatment, the figures given do not indicate the actual number of patients.

#### ANTHRAX.

Orange boxes bound with thongs made of goatskin continue to reach the city from abroad, and, in view of our experience of previous years that these thongs may be infected with anthrax, examinations of them are made periodically. 27 samples were subjected to test in 1930, the anthrax bacillus being found in one test which comprised a group of thongs. No case of anthrax in man came to the notice of the laboratory this year.

#### PSITTACOSIS.

The cases of suspected psittacosis related to a consignment of green parrots, many of which were found dead on board ship, apparently a not unusual occurrence. Concurrently, some lascars on board had taken ill and on arrival of the ship had been removed to one of the city hospitals. It was at this time that cases of psittacosis were occurring elsewhere, and hence the suspicion that was aroused. Eleven parrots

were examined post-mortem in the laboratory and the organs were identical in appearance with those of healthy birds from unsuspected sources. *B. psittacosis*, formerly regarded as the causal agent, was not present in any of the birds. Inoculation experiments upon healthy green parrots with the blood of a suspected lascar gave negative results. It was satisfactorily determined that the illnesses were not due to the virus of psittacosis.

## PLAGUE.

The examination of rats from ships and from the harbour forms a routine section of the laboratory work, since plague is usually acquired from the bite of a rat flea that has fed on an infected rat. During the year 433 rats were examined for evidence of plague. The results were negative. The species of rats examined were *Mus decumanus* (86), *Mus rattus* (184) and *Mus alexandrinus* (163). The proportion of males to females was as 195 to 238.

## INFECTIVE JAUNDICE.

The diagnosis of this disease is made by biological test of the urine in suspected cases. The test was carried out in eight suspected cases during the year, the results being negative. It was intimated in last year's Report that, in the light of the results of the investigations upon rats in the laboratory since 1924, rats being both sufferers from and transmitters of the disease, infected rats in the Glasgow area were very rare. 385 rats having been examined for the causative organism in 1930 with quite negative results, this investigation was brought to a close towards the end of the year.

## MILK SUPPLY.

### I.—IN RELATION TO BOVINE TUBERCULOSIS.

All reports as to whether samples of milk contain tubercle bacilli are based on the results of biological tests. The following samples were reported upon during the year.

1. *Milk from Town Cows*.—During the year the Veterinary Surgeon submitted 210 samples. Five of these gave positive results, two of them being duplicate examinations.

2. *City Milk Supply*.—206 samples were obtained by the milk and dairy inspectors at railway stations and at consignees' premises.

Samples.	Tuberculous.	% Tuberculous.
206	6	2.9

3. *Hospital Milk Supply*.—Samples numbering 325 from these supplies were examined during the year. They are Grade A. (T.T.) milks. None was found tuberculous.

4. *Other Local Authorities.*—The following results were obtained from these samples.

Samples.	Tuberculous.	% Tuberculous.
132	9	6.8

## II.—IN RELATION TO BACTERIAL CONTENT.

*City Milks.*—Milks coming into the city are examined for their bacterial content, the samples being taken at the railway and road transport stations. During the year 203 samples were estimated in this way, as against 206 in the previous year. The results obtained in 1930 and the previous year may be placed together for comparison, as follows:—

	Number examined.	Samples below maximum of Certified Milk (30,000 per c.c.)	Samples below maximum of Grade A Milk (200,000 per c.c.)	Samples above 200,000 per c.c.
1929, ...	206	87 (42%)	71 (35%)	48 (23%)
1930, ...	203	91 (45%)	63 (31%)	49 (24%)

The actual average of bacterial counts of samples of city milks in 1930 are presented in the following table as indicating degrees of purity of production.

Total number of samples examined = 203.

Maximum counts at 37° C. for designated milks (used as a basis of comparison).		Average counts at 37° C. and number of samples involved.	
Below 30,000 per c.c. (Certified), ...	...	14,100 per c.c. for 91 samples=	45%
Below 200,000 per c.c. (Grade A), ...	...	86,500 per c.c. for 63 samples=	31%
		313,800 per c.c. for 18 samples=	9%
Above 200,000 per c.c., ...	...	758,800 " 8 " =	4%
		2,002,500 " 23 " =	11%

It will be observed from the above comparative table of the years 1929 and 1930 how closely similar these years are as regards the categories into which the city milk supplies are found to fall. As has been found in previous years when a milk gives a count that is within the Certified or Grade A maximum it is well within these limits. Milks which exceed the Grade A maximum count tend to go very much beyond it. The bulk of supply of this last class of milk remains almost constant, viz., 23 per cent. of the total supply for 1928, 23 per cent. for 1929, and 24 per cent. for 1930.

*Hospital Milk.*—The City Hospitals are supplied with milk designated as Grade A (T.T.). Estimations of the bacterial content are made fortnightly in the laboratory, and the following are the average bacterial counts per c.c. for 1930:—

Hospital No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
32,380	76,540	29,846	140,800	163,600	494,600

With one exception these figures are seen to fall within the 200,000 mark allowed for milk of the grade supplied.

*Designated Milk.*—During the year 290 samples of designated milks were examined for the Health Department. Of these, 276 were

found to be within the maximum count for their grade, while 14 exceeded it. The details are subjoined.

	Samples.	Within Maximum count.	Over Maximum count
Certified, ...	79	74	5
Grade A (T.T.), ...	155	151	4
Grade A ...	12	8	4
Grade A Pasteurised, ...	19	19	—
Pasteurised, ...	25	24	1
	290	276 (95%)	14 (5%)
1929, ...	262	250 (96%)	12 (4%)

### LOCH KATRINE WATER SUPPLY.

The water supply of the city as delivered from distributing pipes and from Craigmaddie, Mugdock, and Gorbals reservoirs is regularly examined as to purity and bacterial content, four samples from the reservoirs and two from the tap per month. The bacterial content remains fairly constant. The following are the quarterly averages for 1930:—

	Average Count on Agar per c.c.	Average Count on Gelatin per c.c.
January–March, ...	7	51
April–June, ...	6	60
July–September, ...	8	96
October–December, ...	6	69

*B. coli communis* was absent in 10 c.c. of the tap water throughout the year, with the exception of its occurrence in this quantity on one occasion in September.

### HISTOLOGICAL EXAMINATION OF TISSUES.

Portions of tissue to the number of 29 were submitted during the year in order to arrive at diagnosis from the microscopical examination of thin sections of them. Most of these tissues are of the nature of new growths, while some are examined for evidence of tubercular and syphilitic changes. They were submitted by general practitioners, the city hospitals and other Local Authorities. A malignant tumour (sarcoma) was found in the kidney of a dog, and the mesenteric glands of a cat proved to be tubercular in character and were found to contain tubercle bacilli.

### BIOLOGICAL LABORATORY.

Tests of a biological character which are necessary for diagnosis and are applicable to many different diseases are carried out in this laboratory. This year they amounted to 1,615.

### NOTES ON SOME CASES.

The diagnosis of infection of man by *Bacillus enteritidis*, Gærtner, based on the isolation of the organism, is an interesting occurrence, and would appear to be rare in Glasgow. The writer (W.R.W.) has



isolated the above-named organism from man on only two occasions. These occasions were (1) curiously enough, along with a pyogenic coccus from an abscess in the buttock after a quinine injection and (2) from a case of fever of obscure origin in Glasgow in 1930. *Bacillus enteritidis*, Gærtner, is classed bacteriologically as a food poisoning organism, so that the occasional account that has appeared in the literature bearing that this organism may cause a more or less prolonged fever of a typhoid-like character, not only attracts the interest of the bacteriologist but proves to be of some importance to the clinician. The case that occurred in Glasgow in 1930 bore no resemblance in its course to a case of food poisoning. It came to the notice of the laboratory after running a febrile course for a month. Blood culture was advised and carried out, and the organism was found in this way. The stools were then examined and the organism cultivated from the first specimen submitted. No further specimens were submitted although intimation was made of our desire to have them, especially as the patient was a cook.

Another case only exceptionally to be seen in this laboratory was that of tuberculosis in the cat, mentioned under examination of tissues. In the cat this disease is usually limited to the organs of the abdomen or of the thorax, and the bacillary type usually found is the bovine type, the source being milk. Where the lungs of the cat are involved there are likely to be tuberculous secretions in the bronchi and therefore children may be exposed to danger in associating with tuberculous cats. (Compare—Scott: "Tuberculosis in Man and the Lower Animals," Med. Res. Council, Spec. Rep. Series, No. 149.)

The occurrence of the paratyphoid bacillus in the central nervous system should be recorded. A young patient in one of the city hospitals presented such symptoms as to induce the medical officer to take off a sample of the cerebro-spinal fluid. The organism cultivated from this was submitted to the laboratory for identification along with a culture made from the brain after death. The organism from both sites was *B. paratyphosus* B, Schotmüller. The blood of the mother of this patient gave a strong positive reaction for this organism. She was examined merely as a "contact."

Lastly, the following figures in connection with a tuberculous milk are significant as showing that such a milk *from a single cow* may contain so few tubercle bacilli that a positive and a negative result may be obtained with equal moieties of the same sample. The tests apply to the same cow.

Date of Inoculation.		Killed.		Result.
22/2/30	... 1st guinea pig	18/3/30 (24 days),	...	Tuberculous
22/2/30	... 2nd guinea pig	31/3/30 (37 days)	...	Normal
22/3/30	... 1st guinea pig	15/4/30 (24 days),	...	Normal
22/3/30	... 2nd guinea pig	28/4/30 (37 days),	...	Tuberculous

In this last experiment the only lesion seen was moderate enlargement of the left superficial inguinal gland, which contained tubercle bacilli. This gland, when re-inoculated on 28th April, produced generalised tuberculosis in 26 days (24th May).



	Medical Practitioners.	Health Department.	Other Local Authorities.
<b>Venereal Diseases—</b>			
Wassermann Test, ... ..	6,413	4,212	1,097
Kahn—Ante-natal, &c.,... ..	—	2,952	—
Gonococcal Infections other than ophthalmia neonatorum, ... ..	633	765	22
Spirochæta pallida, ... ..	11	—	—
<b>Anthrax—</b>			
Goatskin bindings of orange boxes, ... ..	—	27	—
Oxhide, ... ..	—	2	—
Pus 1, fleshings 1, ... ..	—	2	—
<b>Plague—</b>			
Examination of rats from ships, docks and city, ... ..	—	434	—
<b>Infective Jaundice—</b>			
Material from patients, ... ..	1	6	1
Examination of rats from various sources in the city, ... ..	—	385	—
<b>Malaria—</b>			
Blood, ... ..	8	3	1
<b>Bacterial Diagnosis (various Diseases)—</b>			
Urine 61, sputum 9, fæces 54, pus 12, miscellaneous 44, ... ..	108	56	16
<b>Food-Poisoning Organisms—</b>			
Examination of food-stuffs 18, materials from patients 29, ... ..	4	32	11
<b>Water—</b>			
Bacterial content, ... ..	1	6	7
<b>Milk (Bacterial Content)—</b>			
Under Milk (Special Designations) Order, ... ..	—	290	—
City milk supply, ... ..	—	203	—
Hospital milk supply, ... ..	—	330	—
Miscellaneous, ... ..	—	34	73
<b>Blood—</b>			
Blood count, ... ..	6	35	—
Cell count, ... ..	—	1	—
Cytological examination by smears, ... ..	2	—	—
Bacterial content by culture, ... ..	7	5	1
Pernicious anæmia, ... ..	1	2	—
<b>Influenzal Pneumonia—</b>			
Sputum 2, swab 1, C.S. fluid 1, ... ..	1	1	2
	18,659	18,994	1,848
<b>Histological Examination—</b>			
Tumours and tissues for malignancy, ... ..	9	12	1
Liver of rabbit 1, placenta 1, tonsils 3, iris 1, tissue cells 1, ... ..	6	—	1

					Medical Practitioners.	Health Department.	Other Local Authorities.
<b>Spermatozoa,</b>	...	...	...	...	—	1	—
<b>Fungoid Diseases—</b>							
Ringworm	3,	mycosis	1,	favus	4,	...	1
					1	6	1
<b>Chemical Examination—</b>							
Urine,	...	...	...	...	9	28	1
<b>Preparation of Vaccines,</b>	...	...	...	...	1	—	1
<b>Parasites—</b>							
Scabies,	...	...	...	...	—	3	—
<b>Typhus—</b>							
Serum test (Weil-Felix),	...	...	...	...	10	30	—
<b>Undulant Fever,</b>	...	...	...	...	1	—	—
<b>Psittacosis—</b>							
Patient's blood,	1;	parrots,	11,	...	—	12	—
<b>Streptococcus—</b>							
Examination of water,	...	...	...	...	—	3	—
<b>Insect Pests from Dwelling-houses and Warehouses,</b>							
	...	...	...	...	1	12	1
					18,697	19,101	1,854
					<u>39,652</u>		
<b>Water Department—</b>							
Tap water,	...	...	...	...	...	36	
Reservoirs,	...	...	...	...	...	48	
						—	84
<b>Baths Department—</b>							
Water from swimming ponds,	...	...	...	...	...	140	
						<u>39,876</u>	

W. R. WISEMAN.

## SECTION X.

## FOOD.

## FOOD POISONING.

There were no cases of food poisoning during 1930.

*Export of Spirits.*—In connection with the export of whisky, &c., to one of the South American countries, regulations were put in force regarding the quality, &c., of such spirits, and seven certificates were signed during 1930.

SUMMARY OF OPERATIONS UNDER THE FOOD AND DRUGS (ADULTERATION) ACT; THE MILK AND DAIRIES (SCOTLAND) ACT; THE MERCHANDISE MARKS ACTS; AND ALLIED ACTS AND ORDERS.

*The Food and Drugs (Adulteration) Act.*—In terms of this Act, a total of 5,268 samples were procured and examined, 3,913 being obtained informally and 1,355 procured in terms of the statute. Of these, 142 and 68, respectively, were subsequently certified as non-genuine, and proceedings instituted in connection with 55 of the latter. In each of these a conviction was obtained. There were no contraventions of the provisions governing the sale and delivery of margarine that called for formal action. The total fines and expenses imposed in proceedings under the above Act amounted to £210 10s. 6d.

Further details of operations are contained in the subjoined observations, abstracts, tables, and appendices.

## ABSTRACT OF TOTAL SAMPLES EXAMINED DURING 1930.

Article.	Informal.		Statutory.		Percentage adulterated.		Percentage of samples taken in each group to total.	
	Taken.	Non-Gen.	Taken.	Non-Gen.	Infor.	Stat.	Infor.	Stat.
Milk and cream, ...	2,290	84	834	16	3·7	1·9	58·5	61·5
Milk products (butter, cheese, &c.), ...	584	1	106	1	0·2	0·9	14·9	7·8
Cereals, &c., ...	45	—	45	—	—	—	1·2	3·3
Spirituous liquors, ...	245	24	36	8	9·8	22·2	6·3	2·7
Drugs, ...	256	7	39	2	2·7	5·1	6·5	2·9
Flavourings and condiments, ...	79	1	47	—	1·2	—	2·0	3·5
Miscellaneous foods, &c., ...	414	25	248	41	5·8	16·5	10·6	18·3
Totals, ...	3,913	142	1,355	68	3·6	5·0	100·0	100·0



# ABSTRACT OF INFORMAL AND STATUTORY SAMPLES OF SWEET MILK EXAMINED DURING 1930.

Informal.				Month.	Statutory.			
No. examined.	No. pre- sumed Non- Gen.	Average percentage composition.			No. examined.	No. pre- sumed Non- Gen.	Average percentage composition.	
		Fat. %	Non- Fat. %				Fat. %	Non- Fat. %
210	14	3.54	8.81	January, ...	75	4	3.48	8.64
205	10	3.54	8.80	February, ...	67	1	3.53	8.81
208	12	3.51	8.72	March, ...	73	—	3.59	8.65
201	4	3.55	8.69	April, ...	60	3	3.51	8.61
202	11	3.62	8.70	May, ...	69	1	3.53	8.57
153	7	3.59	8.74	June, ...	74	1	3.40	8.68
165	8	3.48	8.70	July, ...	62	1	3.49	8.62
174	5	3.56	8.64	August, ...	62	3	3.52	8.67
196	5	3.67	8.74	September, ...	77	1	3.65	8.68
179	5	3.79	8.81	October, ...	64	—	3.81	8.78
163	3	3.82	8.84	November, ...	65	1	3.76	8.75
167	1	3.71	8.83	December, ...	70	—	3.68	8.75

*Colouring Matter in Milk or Cream.*—In terms of the Milk and Dairies (Amendment) Act, 1922, and the Milk and Dairies (Scotland) Order, 1925, all samples of milk and cream were in addition examined for the presence of colouring matter, &c. Three samples of milk were found to contain annatto. In one instance proceedings were taken and a penalty of £2 imposed.

*Examination of Tea.*—Although the provisions in the 1875 Act relating to sampling of tea by the officers of Customs and Excise were not repealed by the consolidating Act of 1928, it was deemed that, in view of the repeal of *all* duty on tea, the incidence of sampling would be lessened. Samples of tea were therefore examined in course, and in no instances were these found to be mixed with other substances or to contain exhausted tea.

*Cheese.*—The question of a butter-fat standard for cheese has been from time to time under consideration by the Government. In 1926 the Minister of Agriculture considered that there was insufficient reason for establishing a legal minimum standard of quality for cheese and other agricultural products, as recommended by the Linlithgow Committee. New proposals, however, are embodied in a Bill to amend the Food and Drugs Act, which received a first reading on 1st July, 1930. The Bill requires the labelling and marking of "skimmed-milk cheese" as such on lines analogous to those relating to margarine, and sets up definitions and standards of quality, viz., (1) "whole-milk cheese," to contain at least 45 per cent. of milk-fat in the dry matter; (2) "cream cheese," to contain at least 80 per cent. of milk-fat in the dry matter; and (3) "skimmed-milk cheese," to mean any cheese which is neither whole-milk cheese nor cream cheese as defined. Samples of cheese, as sold under this generic title, vary greatly in composition: thus, samples examined during the year were found to range—in the case of water content, from 20.02 to 47.67 per cent.; fat (not estimated on dry basis), from

16.14 to 55.30 per cent.; and protein, from 16.78 to 45.31 per cent. Notwithstanding the difficulties associated with the absence of obligatory limits, proceedings were again successful in respect of "cream cheese," which was proved to have been made from partially skimmed milk.

A form of cheese distribution, which is supplanting to a considerable extent the sales of ordinary cheese, is that of the crustless or rindless type, in which tinfoil is used as a wrapping, and sold in cartons, loaf, or segmental form. Formerly, these were entirely imported, but, with the vogue these have acquired, a new industry in their manufacture has been created and is extending in this country. Ordinary cheese is used in the processing, the crust being removed and the cheese "masticated" by machinery. It is thereafter pasteurised, cooled and blocked-out to the desired form, and so wrapped in tinfoil as to be virtually air-tight. In view of a reference in the Ministry of Health's Report to the possible presence of tin in such cheese, in amounts potentially dangerous, samples of all available brands were procured and carefully examined. The details in tabular form are appended.

#### RESULTS OF EXAMINATION OF CRUSTLESS CHEESE FOR THE PRESENCE OF METALLIC TIN.

Sample No.	Form.	Appearance of Foil in Contact with Cheese.	Appearance of Cheese.	Metallic Tin (Grains per lb.).	Country of Origin.
2907	Carton	Bright ... ..	Clean ... ..	Absent ...	Holland.
2908	"	" ... ..	" ... ..	" ...	England.
2915	"	Fairly bright ... ..	" ... ..	" ...	Switzerland.
2916	"	Dull ... ..	" ... ..	" ...	"
2917	"	" ... ..	" ... ..	" ...	Scotland.
2918	Loaf	Black ... ..	Discoloured ... ..	0.16 ...	Holland.
2919	"	Foil removed ... ..	Clean ... ..	Absent ...	England.
2920	"	Black ... ..	Discoloured ... ..	0.17 ...	Canada.
2921	Carton	Fairly bright ... ..	Clean ... ..	Absent ...	England.
2922	Loaf	Dull ... ..	Fairly clean ... ..	Trace ...	"
2925	Carton	Bright ... ..	Clean ... ..	Absent ...	"
2926	Bonbon	" ... ..	" ... ..	" ...	"
2941	Carton	" ... ..	" ... ..	" ...	Switzerland.
2945	"	Fairly bright ... ..	" ... ..	" ...	England.
2946	"	Bright ... ..	" ... ..	" ...	France.
2947	"	" ... ..	" ... ..	" ...	England.
2948	"	" ... ..	" ... ..	" ...	"
2949	"	Fairly bright ... ..	" ... ..	0.05 ...	Switzerland.
2962	"	" ... ..	" ... ..	Absent ...	England.
2968	Loaf	" ... ..	Slightly discoloured ... ..	0.07 ...	Holland.
3196	"	Dull ... ..	Fairly clean ... ..	Trace ...	"
3197	"	" ... ..	Clean ... ..	0.16 ...	Canada.
3202	"	" ... ..	Fairly clean ... ..	0.09 ...	Holland.
3240	"	Slightly discoloured ... ..	Slightly discoloured ... ..	0.13 ...	"

In each instance the tinfoil on removal was closely examined, and its appearance, as will be observed, found to vary from "bright" through "dull" to "black." In the case of the latter two samples, the discoloration had imparted itself to the surfaces of the cheese. The outer surfaces of all the samples were removed for the estimation of the possible presence of metallic tin. The amount of tin found is

calculated on the total weight of the sample; and of the seven samples in which it was quantitatively present in no case did this exceed 0.17 grains of metallic tin. Precisely what chemical or other process it is that transfers the tin of the foil to the edible product cannot be said at present.

From the administrative point of view, it may be noted that, in the case of canned foods, unless the amount of tin present is approaching two grains per pound, it is not deemed potentially deleterious to health (*vide* L.G.B. Food Reports, No. 7). On a comparative basis, and taking the highest proportion present in the samples examined, i.e., 0.17 grains, approximately 12 lbs. of cheese would require to be consumed before the above figure was reached. While any evidence of metallic impurities in a food-stuff is to be deprecated, undue significance to the prejudice of the commodity need not be inferred from the analytical results. Nevertheless, from a marketing point of view any cause for complaint would be entirely removed by the use of the higher grade and specially coated foils which are available. The attention of dealers in the case of samples in which the metal was quantitatively present has, therefore, been directed to the matter.

*Self-Raising Flour.*—Attention was directed to a consignment of dicalcium phosphate (precipitated phosphate of lime) which contained an excessive quantity of lead. This was consigned from Germany to a city firm for ultimate conversion, by treatment with phosphoric acid, into acid calcium phosphate for use as the acidic constituent of self raising-flours, which, amongst bakers, has practically superseded tartaric acid or cream of tartar. In terms of the safeguarding of Industries Act this import is liable to duty if, *inter alia*, it contains not more than 50 parts of lead per million. A sample of the consignment, submitted by the Customs and Excise to the Government Laboratories, had been reported as containing 600 parts of lead per million. A composite sample of the consignment was subsequently obtained by this Department, and found by the Corporation Chemist to contain 1,700 parts of lead per million. A sample of the finished product was also obtained, i.e., acid calcium phosphate, which is sold and dealt in by the trade under the generic title of tartar substitute or "cream powder." This, on analysis, was found to contain 600 parts of lead per million. On the facts being communicated to the manufacturers, they immediately discontinued the sale or use of the material for other than industrial purposes, and undertook to manufacture their tartar substitute from bone ash only. Further samples subsequently obtained were found normal as to lead content.

Samples of all known makes of tartar substitutes in use were also obtained, 17 in all being examined, excluding the above; and in no cases did the proportion of lead exceed 40 parts per million. As about two per cent. of tartar substitute ("cream powder") is used in the production of self-raising flour, samples of the various brands of this commodity were also procured and examined as to their lead content. A total of 32 samples were analysed, and only in 13 of these was lead quantitatively

present. In nine of the samples the proportion of lead was two to three parts per million, and in the remaining four the figures were four, five, six and eight parts, respectively.

*Cod Liver Oil Compounds.*—The varying composition and lack of accepted standards for these commodities sold either as emulsions or in combination with extract of malt were under review by this Department in 1926. Representations were then made to the Scottish Board of Health and the Pharmaceutical Society of Great Britain, and assurances given that the matter would receive the careful consideration of the General Council for Medical Education and Registration.

During the current year further examinations were made, and 12 samples of cod liver oil emulsions, and 12 of extract of malt combined with cod liver oil, were procured and analysed. The cod liver oil content of the emulsions was found to range from 22.79 to 31.8 per cent. by volume. These figures are considerably below the standard of the British Pharmacopœia Codex, viz., 50 per cent., exacted by the National Health Insurance Drug Tariff with the concurrence of the Department of Health for Scotland, but as the commodity is not included in the British Pharmacopœia, 1914—which alone is recognised in legal proceedings—it is outwith administrative action. On the other hand, experienced pharmacists contend that a cod liver oil content exceeding 30 per cent. is unpalatable and even nauseating to many people, and representations have or are being made in this regard.

In the case of the samples of extract of malt and (or with) cod liver oil examined, an advance on desirable lines was noted, in that in three instances the proportion of oil present was declared on the label—one of  $7\frac{1}{2}$  per cent. and two of 15 per cent.—and the samples found to conform thereto. Of the further nine samples, in six the oil content ranged from 12.63 to 16.46 per cent., two were between seven and eight per cent., and one contained only 3.39 per cent. It may be observed that the last mentioned was labelled “blended with cod liver oil.”

In all the samples vitamin A was found present. While the Codex and the Insurance Drug Tariff exact a percentage of 15 per cent. oil by volume, administratively the observations with reference to emulsions equally apply. The present British Pharmacopœia, 1914, is admittedly in need of revision, and the General Medical Council has set up a new body of a permanent character, “The Pharmacopœia Commission.” A first report has been issued by the Commission for observations and comment, in which, *inter alia*, extract of malt and cod liver oil is dealt with, and a standard of ten per cent. oil proposed.

*Preservatives, &c., in Food.*—The ban on the use or limitation of chemical preservatives that may be added to foodstuffs continues to cause considerable concern to the respective affected trades, particularly with reference to cream. Three creameries in Scotland are reported



as having closed down during the year, and in the remainder sales have diminished by 50 per cent. In the case also of butchers, permission to add sulphites to mince during the months of June to September only is objected to as restrictive of trade, but no concessions have been granted by the Government.

With the exception of what is called "home made," or manufactured on a small scale by individual traders, the manufacture and sale of potted meats as distributed in Glasgow and contiguous areas are practically in the hands of three city firms. Following upon a prosecution in 1929 in respect of the presence of boric acid, representations were received from these firms jointly as to the impracticability of marketing their commodities during the summer months without the addition of a minimum of boric acid. Potted head and veal are made from heads, feet, blood of cattle, and "slink" or immature veal; and, though a cooked article, the finished product is admittedly possessed of but small keeping properties, owing to its high water content and jellied condition.

As the relaxation of the Regulations is entirely a matter for the Central Authority, the petitioners were referred to the Department of Health. They subsequently presented a memorial, in which they craved permission to use 0.1 per cent. of boric acid from June to September, inclusive. They were later advised of the inability of the Department to concur in this view.

Three samples of a commodity sold to butchers under the descriptive title of "preserving meal" were found to be entirely valueless as a preservative, consisting wholly of potato starch, no natural or chemical preservative of any kind being present. This suggests a "false trade description" in terms of Sections 3 and 5 of the Merchandise Marks Act, 1887, and proceedings were contemplated, but, as the supplying firm was outwith Scotland, the facts disclosed were communicated to the Authorities of the area in question.

Advice was received from the Department of Health for Scotland that a consignment of barley (50 bags) arriving at the Port of Glasgow from Hamburg and sampled by the officers of Customs and Excise, had been reported by the chemists of the Government Laboratories, London, to contain 25 parts per million of sulphur dioxide. As the information was not received till six weeks or so subsequent to date of importation, it was learned on enquiry that the barley had been distributed, and, in fact, consumed. A portion of the sample in sealed glass jar, as received by the importers from the Customs and Excise, was, however, obtained and submitted to the Public Analyst, who later reported that the sample was entirely free from any trace of sulphite preservatives.

The butchers still constitute the chief, and practically the only, offenders under these Regulations, and a haphazardness in the use of "Madam Rachel" (sulphites) would appear to be almost an inherent characteristic of the trade. The necessity for proceedings arose in respect of 35 samples, as against 31 in 1929 and 29 in 1928. Three of



these were second offences, and the total fines imposed amounted to £111 10s.

Appended is table of samples in which preservatives, &c., were found, together with a note of the nature and amounts.

ABSTRACT OF ARTICLES OF FOOD IN WHICH PRESERVATIVES, &c., WERE FOUND, AND THE NATURE AND AMOUNT, DURING YEAR ENDING 31ST DECEMBER, 1930.

Nature of article.	Number examined.	No. in which Preservatives, &c., were found.	Nature of Preservative, &c.	Parts per million.	
				Lowest.	Highest.
Apricots (Dried), ...	8	4	Sulphur dioxide, ...	307	— 921
Candied peel, ...	14	1	" " ...	— 20	—
Cider, ...	1	1	" " ...	— 77	—
Cornflour, ...	4	2	" " ...	10	— 45
Custard powder, ...	4	2	" " ...	20	— 96
Fruit salad (Dried),	2	1	" " ...	— 153	—
Mince, ...	86	62	" " ...	9	— 1,737
Pickles, ...	1	1	Benzoic acid, ...	— Trace	—
Pie meat, ...	1	1	Sulphur dioxide, ...	— 264	—
Preserves, ...	17	2	Sulphur dioxide (1)	— 32	—
			Benzoic acid (1) ...	— 152	—
Sausages, ...	37	34	Sulphur dioxide, ...	26	— 926
Sausage meat, ...	16	12	" " ...	63	— 826
Sultanas, ...	63	9	" " ...	13	— 748
Tapioca, ...	7	1	" " ...	— 32	—
Wines (Alcoholic),	4	2	" " ...	121	— 147
" (Non-alcoholic)	15	12	Sulphur dioxide (6)	79	— 267
			Benzoic acid (6), ...	317	— 561

*Milk (Special Designations) Order (Scotland), 1930.*—The Order and Amendment Order, both of 1923, have now been consolidated under the above title, no change in the text being effected.

The details of licences in force at the end of 1930, with comparative figures for the two previous years, are as undernoted :—

	1930	1929	1928
<b>Certified—</b>			
Producers, ...	1	1	1
Dealers, ...	50	46	40
Total average daily sales (gallons),	126	119	106
<b>Grade "A" (Tuberculin Tested)—</b>			
Producers, ...	—	—	—
Bottling establishments, ...	4	4	4
Dealers, ...	280	263	257
Total average daily sales (gallons),	936	922	955
<b>Grade "A" —</b>			
Producers, ...	—	—	—
Bottling establishments, ...	1	1	1
Dealers, ...	51	45	47
Total average daily sales (gallons),	*408	*418	*420
<b>Pasteurised—</b>			
Pasteurising establishments, ...	2	2	2
Dealers, ...	17	15	16
Total average daily sales (gallons),	1,100	650	540

\* 400 gallons were pasteurised.

*Note.*—The gallonage is exclusive of supplies to institutions and of pasteurised milk not described or sold as such.

During the year, a total of 290 samples of designated milks were procured and examined as to their conformity with the above Order, and a tabular statement of the results is appended.

### RESULTS OF EXAMINATIONS OF DESIGNATED MILKS.

Designation and Requirements.	Number examined.	Agar Count per c.c.				Coliform Bacilli.		Fat minimum (3.5 %).			
		Number conform to count.	Number exceeding count.	Lowest.	Highest.	Average of 10 samples.	-	+	Number at or above.	Number below.	Average.
CERTIFIED— Bacteria not to exceed 30,000; Coliform absent in $\frac{1}{10}$ c.c.; Fat not less than 3.5 per cent.	79	74	5	400	264,250	10,808	70	9	74	5	3.5
GRADE "A" (Tuberculin Tested)— Bacteria not to exceed 200,000; Coliform absent in $\frac{1}{100}$ c.c.; Fat not less than 3.5 per cent.	154	150	4	300	1,767,000	35,411	131	23	145	9	3.4
GRADE "A"— Requirements are as for Grade "A" (Tuberculin Tested),...	13	9	4	6,750	491,400	136,454	11	2	11	2	3.4
GRADE "A" (Pasteurised)— Requirements are as for "Certified," ... ..	23	23	—	200	9,900	2,278	19	4	23	—	3.6
PASTEURISED— Bacteria not to exceed 100,000 (No Coliform test prescribed),	21	20	1	1,200	124,200	13,102	17	4	21	—	3.7

These results did not call for special action, with two exceptions, one being in relation to a "Certified" supply and one to Grade "A." In the case of the former, repeated adverse bacteriological and chemical reports of samples as produced and bottled in an adjacent county necessitated representations being made to the officials of the area. These resulted in the producer being ordained to appear before the County Sub-Committee appointed for the purposes of the Order to show cause why his licence should not be revoked. After consideration, the Committee decided that revocation of the producer's licence should meantime be delayed. This was attended with satisfactory results, and the remit subsequently discharged.

In the other instance, samples of Grade "A" milk as produced in a further adjacent county were found equally unsatisfactory, and representations made to the Authorities. The delinquent subsequently ceased to carry on the business of a dairyman.

Sales of the higher grades of designated milk, as will have been observed, remain somewhat static, and potential sources of supply are greatly in excess of requirements. Many producers have now assumed "a not worth while" attitude, a well known certified producer's view being "the public, in view of expense in production entailed, must be prepared to pay three times the present price of ordinary milk." On the other hand, many others accept prevailing prices as satisfactory, if markets were obtainable.

*Designated Milk Supplies to Infectious Disease Hospitals and Sanatoria.*—Appended are analyses of results of the bacteriological and chemical examinations of samples of Grade "A" (Tuberculin Tested) milk obtained at irregular intervals from producers' supplies, as delivered. The total daily quantity received is, approximately, 670 gallons.

As a change in the contractors was made as from 1st June, 1930, separate tables for the respective periods are shown.

ABSTRACT OF RESULTS OF EXAMINATION OF GRADE "A" (TUBERCULIN TESTED) MILK AS SUPPLIED TO INFECTIOUS DISEASE HOSPITALS, &C.

For Period 1st January to 31st May, 1930.

Consignor.	Number examined.	Examined as to Count and Coliform.					Examined as to Fat. Minimum = 3.5%.			
		Number conform to count.	Number exceeding count.	Lowest.	Highest.	Average of total samples.	Coliform Bacilli.		Number examined.	Number at or above.
							-	+		
H. (A.),	10	10	—	1,050	4,600	2,130	10	—	16	16
S. (B.),	9	9	—	4,550	13,550	7,794	9	—	19	19
R. (S.),	20	20	—	1,600	40,800	8,517	20	—	42	37
K. (S.),	20	20	—	3,650	68,200	17,060	20	—	42	40
F. (B.),	20	20	—	8,250	82,100	25,407	19	1	42	40
B. (B.),	20	20	—	2,650	22,100	10,392	20	—	42	42
P. (S.D.),	20	20	—	1,100	9,300	3,552	20	—	42	41
L. (B.),	16	16	—	9,150	175,200	52,247	16	—	30	26
P. (B.),	14	14	—	1,250	21,900	8,482	13	1	32	27
										5
										3.81

For Period 1st June to 31st December, 1930.

Consignor.	Number examined.	Examined as to Count and Coliform.					Examined as to Fat. Minimum = 3.5%.			
		Number conform to count.	Number exceeding count.	Lowest.	Highest.	Average of total samples.	Coliform Bacilli.		Number examined.	Number at or above.
							-	+		
K. (A.),	27	23	4	2,000	2,808,000	170,213	23	4	52	50
B. (D.),	14	11	3	1,200	1,449,000	183,689	12	2	26	24
W. (A.),	28	24	4	2,250	690,750	72,559	22	6	61	55
J. (B.),	13	13	—	700	120,400	16,812	10	3	27	27
G. (C.),	—	—	—	—	—	—	—	—	2	2
C. (C.),	15*	9	6	1,250	3,218,000	481,011	8	7	30	29
D. (F.),	16	10	6	6,500	1,365,000	254,322	9	7	27	26
L. (G.),	5	4	1	1,400	320,800	74,610	4	1	3	3
M. (L.),	28	27	1	1,750	1,448,000	64,961	26	2	60	60
G. (H.N.),	2	—	—	4,300	13,600	8,950	2	—	6	6
D. (K.),	3	2	1	82,100	331,400	185,100	—	3	9	8
S. (B.),	4	4	—	2,100	4,350	3,175	4	—	16	16

\* One sample uncountable, and not included in average.

It may be observed that in the first period no single sample had been found to exceed the permissible bacterial count, and the average of each farmer's, with one exception, was even within the "certified" limit, with coliforms present on only two occasions. With the change of contractors, however, adverse bacteriological reports were early in

evidence, and the question arose of determining the contract. For the satisfaction of the contractors, who indirectly questioned these results, it was arranged that their representative should be present at deliveries over a period, and duplicate sampling effected, their portion to be submitted to their own bacteriologist. It is gratifying to note that the results were fully corroborative of the Corporation Bacteriologist's reports. Following this procedure, adverse reports practically ceased.

*Bacterial Content of Milk produced Locally.*—With a view to ascertaining how far conditions of production required by the new bye-laws were complied with, as disclosed by the bacterial content of milk produced at farms within the city area, samples from 32 farms were obtained and submitted for examination. In no instance was plating effected until 18 to 20 hours after production. The results are as under:—

#### BACTERIAL CONTENT OF LOCALLY-PRODUCED MILK.

Sample No.	Agar Count per c.c. 2 days at 37°C.	Coliforms.			
		1 c.c.	1/10 c.c.	1/100 c.c.	1/1000 c.c.
1	9,950	—	—	—	—
2	5,450	—	—	—	—
3	4,400	—	—	—	—
4	2,100	—	—	—	—
5	10,450	—	—	—	—
6	10,550	—	—	—	—
7	20,900	—	—	—	—
8	6,800	+	—	—	—
9	16,600	+	—	—	—
10	1,650	+	—	—	—
11	4,850	—	—	—	—
12	11,300	—	—	—	—
13	4,550	—	—	—	—
14	7,950	—	—	—	—
15	102,350	+	—	—	—
16	6,500	+	—	—	—
17	4,300	+	+	—	—
18	11,600	+	—	—	—
19	7,600	—	—	—	—
20	1,900	—	—	—	—
21	22,650	+	—	—	—
22	5,150	—	—	—	—
23	2,100	—	—	—	—
24	21,300	—	—	—	—
25	3,150	—	—	—	—
26	17,800	—	—	—	—
27	59,050	+	+	+	+
28	36,750	+	+	—	—
29	4,550	—	—	—	—
30	4,600	+	—	—	—
31	4,550	+	—	—	—
32	8,550	+	—	—	—

With the exception of four samples, it will be observed that all were conform, both in respect of bacterial count and absence of coliforms, to the requirements of Certified Milk, equivalent to 87·5 per

cent. If expressed in terms of Grade "A" Milk, 97 per cent. reached that standard. In the majority of the samples the milk was sold as "warm," for which there is still a demand amongst a certain class of consumers. Other things being equal, this admittedly militated against even better results being achieved.

*Condensed and Dried Milks.*—The respective Regulations of 1923 and 1927 governing the sale of these commodities have been consolidated as Provisional Regulations, dated May 16th, 1930, and are now known as the Public Health (Condensed (or Dried) Milk) Regulations (Scotland), 1930. A total of 30 samples of condensed milks were analysed, eight being of full cream (sweetened), fourteen of machine-skimmed (sweetened), and eight of evaporated (unsweetened). Two samples of evaporated milk were found to be slightly deficient in percentage of total solids, and the equivalence in one sample of machine-skimmed slightly below that declared. All other samples were found conform, in composition and labelling, to the Regulations.

The obtaining of samples of dried milk is one of increasing difficulty, as sales are practically *non est*. Nine samples of different brands were in all obtained, six of which were of full cream, and one each of half-cream, machine-skimmed, and full cream and virol. In two samples of full cream, the fatty solids were reported as slightly low, and the remainder, with one exception, conform in all respects. The latter, a sample of half-cream, had no equivalence stated, but was marked "specially improved." It was found to contain less than 70 per cent. dried milk, and therefore outwith the scope of the Regulations.

*Tubercle, &c., in Milk.*—During the year a total of 203 samples of raw milk, as consigned by farmers to city dairymen, were procured on arrival, and submitted for bacteriological examination. Seven samples were reported as tuberculous, equivalent to 3.45 per cent., compared with 2.91 per cent. in 1929 and 3.98 per cent. in 1928. In the subsequent inspection of the herds, with two exceptions, affected animals were found, five cows in all being removed and slaughtered.

The circumstances associated with one of these samples found positive indicate difficulties of detection which may arise. On veterinary inspection of the herd, one animal, clinically diagnosed as "suspect," was placed under restriction (i.e., the milk was said to be boiled and used by the household) pending further bacteriological examination. This proving negative, the animal was subsequently freed by the County Authorities. As is customary, the usual repeat sample of the consignment was subsequently taken on arrival, and again found positive by the City Bacteriologist. A further inspection was, therefore, made of the herd, and another sample from the same animal found positive. The cow was removed and slaughtered, the udder, on post-mortem examination, being found tubercular.



With respect to the bacterial counts of the 203 samples examined, the following table shows the results thereof:—

STATEMENT OF RESULTS OF EXAMINATION FOR BACTERIA OF  
FARMERS' SUPPLIES AS RECEIVED BY CITY DAIRYMEN.

Number examined.	Average number of Bacteria per c.c.					Coliforms in 1/100 c.c. (2 days).	
	Under 100,000.	100,000 to 200,000.	200,000 to 500,000.	500,000 to 1,000,000.	Over 1,000,000.	-	+
203	129	24	19	8	23	129	74

As will be observed from the above table, 75 per cent. were in respect of bacterial count of Grade "A" quality, compared with 77 per cent. in 1929. Of the 129 samples containing less than 100,000 bacteria per c.c. (equal to 64 per cent., as against 67 per cent. in the previous year) 91 of these, or 70 per cent., were of "Certified" quality, compared with 63 per cent. in 1929. With regard to coliform bacilli, its absence in 1/100 c.c. was reported in 64 per cent. of the samples, compared with 73 per cent. in the previous year.

From a consideration of these results as a whole, there is evidence of a somewhat retrograde movement, in which climatic conditions cannot be wholly adduced in extenuation, as these were no less favourable in 1930 than in the previous year. They are more probably due to a decline in the personal equation, despite the many educational agencies operating and facilities afforded for the guidance and instruction of producers.

*Merchandise Marks Acts and Orders.*—In the early part of the year, there was reason to complain of the illegible marking of imported eggs, which in many instances consisted of a mere daub of colour. As the inspection on importation devolves, in terms of the Acts, upon the officers of Customs and Excise, the attention of the Central Authority was directed to the matter. Subsequently, several shipments were held up, and in some instances re-exported. The awkward situation arose that retailers of such eggs were liable to prosecution, while wholesale dealers repudiated liability in respect of eggs sold by the case. Two actions were raised in the courts against wholesale dealers in order to test their responsibility, in view of the definition of "sale" in the Act including "wholesale." They were specially defended in the interests of the trade.

In the first case, it was contended that there was no onus on the respondent to open any case before effecting sales, in order to ascertain that the eggs were conform to statute, and that to do so was impracticable and an undue interference with or restraint of trade not contemplated by the legislature. From this contention the defence later departed, and led evidence (not previously disclosed to the prosecution) to the effect that inspection of one lot had in fact been made and the contents found conform. In view of the terms of Section 5 (5) of the 1926 Act, it was therefore held that "reasonable precaution against committing an offence" had been taken, and the charge was dismissed.

In the second case, the firm charged were both importers and wholesale dealers, and all sales effected ex quay. The arguments were (1) that the verbal contract of sale was conditional on examination by the buyer; the eggs having been rejected, the sale was in fact not completed; (2) that having sold the eggs in cases the respondents were not responsible for the state of the individual eggs; (3) that as the importation of unmarked eggs was an offence the firms were absolved where such goods had been cleared by the Customs, and Customs Clearing Charges paid, or, alternatively, that in view of the facts disclosed in evidence and in terms of sub-clause B of Section 5 (5) they "had acted innocently."

The Stipendiary Magistrate, in his subsequent judgment, said that, in view of all the circumstances narrated in the course of the proof, he was disposed to hold that there was an absence of intent on the part of the respondents to infringe the statute, and accordingly found the charge not proven. In an addendum, the Stipendiary Magistrate stated that he, however, wished it to be understood that importers were not, in virtue of Customs Clearing Charges exacted, entitled to assume that goods on clearance were necessarily conform to statute.

*Swedish Butter as Danish.*—A firm of provision merchants was charged under the principal Act with having in their possession for sale Swedish butter to which a false trade description, namely, "Extra Special Danish Butter" had been applied by means of a printed card. It was pleaded in mitigation that the offence was due to the thoughtless act of an employee. A penalty of £3 was imposed.

*Imported Eggs as "New Laid Country."*—An Irish ham, butter and egg merchant was charged on two counts, viz., under the Marking Order and under the principal Act with having (1) exposed imported hen eggs for sale from which the indication of origin had been removed, and (2) applied to a basket containing the eggs a false trade description by affixing a ticket bearing the words "Extra Large New-laid Country, from the Mearns." Evidence of removal of marks was demonstrated in Court by ultra-violet ray apparatus, and proof also led of the detection of hydrochloric acid in the shells, this acid having probably been employed for the removal of the marks. The Stipendiary Magistrate, in convicting the respondent, referred to the offence as one of gross fraud, and imposed an *in cumulo* penalty of £15, with the alternative of six weeks' imprisonment.

On 17th March, 1930, the provisions of a new Order (No. 4) relating to the marking of imported raw tomatoes became operative, the requirements being analogous to those affecting fresh apples. There were nine prosecutions in connection with the former and two with the latter, and in each case a modified penalty was imposed. The total prosecutions were 16, and the penalties *in cumulo* £31.

*Registration of Butter Factories, &c.*—In terms of Section 8 of the Food and Drugs Act, four applications for registration were received

during the year, all of which were in respect of wholesale dealing in margarine. Upon report as to their compliance with the statute, these were duly certificated. Inspection and sampling in butter factories were also maintained, and no irregularities in connection therewith noted. As the result of a partial purging of the register, there is a diminution in the number of wholesale dealers in margarine, but butter factories remain as in 1929 at 18. The nature of premises to which the section applies, and the number on the register at the end of 1930 are as under:—

Manufacturers of margarine, ... ..	—
Wholesale dealers in margarine, ... ..	253
Manufactories of milk-blended butter, ... ..	—
Wholesale dealers in milk-blended butter, ... ..	—
Butter factories, ... ..	18

*Fertilisers and Feeding Stuffs Act, 1926.*—During the year samples of most of the concentrates, as well as the common feeds in use, were informally obtained and examined in terms of the Act. A total of 34 samples were submitted to the Agricultural Analyst, all of which, with but slight variations in percentages of constituents, were found to comply with the statutory statement supplied by the sellers.

*Food Inspection, &c.*—A total of 14,595 inspections were made during the year in markets, shops, and stores for the detection of unsound or unwholesome food. In connection therewith, a total of over 75 tons of various food stuffs were adjudged by the inspectors as unfit for human food, and accordingly destroyed or so dealt with as to preclude their use as such. The details of these are contained in the appendices.

The Public Health (Meat) Regulations (Scotland), 1924, have now, consequential on the Local Government changes, been re-enacted as from 16th May, 1930, and in terms of Article 13 renewal of certificates in respect of storage accommodation granted thereunder. There are now nine, as against ten such premises on the register in 1929, and 47 copy certificates for the use of vehicles trading therefrom were also issued.

The expected legislation in relation to the storage and handling of foodstuffs generally has not so far materialised, although much consideration has been given to this important and difficult subject in many quarters. Nevertheless, advance in protection of foodstuffs continues to be made under, and mainly attributable to, the influences of public opinion, persuasion, and example. The almost universal wrapping of bread, the continued increase in the bottling of milk, the growth of sales of pre-packed articles of food, the greater protection of foodstuffs generally from contamination, along with a minimum of handling, are all evidence of progress in the desired direction.

*Milk and Dairies (Scotland) Order, 1925.*—Despite the extensive use by the larger dairymen of the facilities afforded by the bottle exchange, the retention and use by the lesser dairymen of bottles

belonging to other dairymen and without their consent continue to be somewhat marked, and complaints are numerous. A slight advance in the penalties imposed is believed to be having a more deterrent effect. There were 10 prosecutions in 1930, as against 12 in the previous year, and in each a fine was imposed, amounting in all to £24. Proceedings were also taken against a dealer for transferring milk from one vessel to another in a railway station, and a penalty of £2 imposed.

*Dairies.*—In terms of the Milk and Dairies (Scotland) Act, 1914, the total on the register at the end of the year was 1,690, as against 1,676 in 1929—an increase of 14. Of these, 345 were in respect of limited registration, whereby conditions of trading are restricted to the reception and sale of bottled milk only, compared with 315 in 1929—an increase of 30.

During the year a total of 23,271 inspections of dairy premises were made, and a number of minor breaches of the bye-laws, as also the necessity for repairs or improvements, noted. Notices issued in connection with these matters received due attention. The increase in the bottle distribution of milk continues, despite the not inconsiderable cost which breakages and loss of bottles entail, and which almost threatens its further extension. One firm with a turnover of nine to ten thousand gallons daily now bottles over 95 per cent.

*Byres.*—The dairy byres within the city boundaries number 53, the same as in 1929, all of which (with one exception) are in areas with grazing facilities. The registered accommodation therein is for 1,217 cows, the average number kept being 1,025, a slight decrease on the previous year. 550 inspections in these premises were made, all of which continue to be maintained and kept in a satisfactory manner.

*Ice Cream Shops.*—Premises registered for the purpose of dealing in ice cream, in terms of the Glasgow Corporation Order, 1919, numbered 605 at the end of the year, as against 618 in 1929, a decrease of 13. 9,389 inspections in connection therewith were made, and in only one instance did occasion for proceedings arise. On a police information, it was averred that premises had been used as a sleeping apartment, but on the evidence led the charge was found not proven.

ALEXR. B. FINDLAY.

*Senior Food Inspector.*

20th March, 1931.



## THE FOOD AND DRUGS (ADULTERATION) ACT.

TABLE SHOWING NATURE AND NUMBER OF TOTAL SAMPLES  
PROCURED AND EXAMINED DURING 1930.

Nature of Sample.	Informal.		Statutory.		Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.		Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Aerated Waters, ...	2	—	—	—	Fruit Salad, canned	—	—	1	—
Almonds, ground	20	—	3	—	„ dried,	2	—	1	—
Apricots, dried, ...	6	—	2	—	Gin, ...	16	—	—	—
Arrowroot, ...	3	—	5	—	Ginger, ground,	5	—	9	—
Bacon, ...	5	—	4	—	Glycerine, ...	1	—	1	—
Baking Powder, ...	1	—	—	—	Gregory's Powder,	8	—	1	—
Baking Soda, ...	—	—	4	—	Ham, ...	17	—	—	—
Barley, ...	15	—	11	—	Ice Cream, ...	6	—	—	—
Beans, canned, ...	—	—	1	—	Ice Cream Powder,	1	—	—	—
Blood Pudding,	2	—	—	—	Iodine Paint, ...	1	—	—	—
Borax, purified,	5	—	6	—	Lard, ...	16	—	17	—
Boric Acid Powder,	3	—	2	—	Lemon Cheese, ...	2	—	—	—
Butter, ...	500	1	84	—	Lime Water, ...	8	3	—	—
Calamine, ...	2	—	—	—	Liniment of Tur-	—	—	—	—
Candied Peel, ...	8	—	6	—	pentine, ...	4	—	—	—
Cascara Sagrada,	3	—	1	—	Linseed, crushed,	3	—	—	—
Cheese, ...	75	—	21	—	Liquorice, Com-	—	—	—	—
Cheese, cream ...	—	—	1	1	„ pound powder of,	19	1	—	—
Cherries, preserved,	5	—	3	—	Macaroni, ...	1	—	—	—
Chocolate, ...	1	—	—	—	Margarine, ...	9	—	13	—
Cider, ...	1	—	—	—	Meat, paste, ...	5	—	1	—
Cinnamon, ground,	19	1	12	—	„ potted, ...	10	—	—	—
Citric Acid, ...	—	—	1	—	Milk, condensed,	—	—	—	—
Cocoa, ...	10	—	1	—	„ full cream,	—	—	—	—
Coffee, ...	25	—	14	—	„ sweetened,	8	—	—	—
Cooking Fat, ...	—	—	1	—	„ condensed,	—	—	—	—
Cornflour, ...	2	—	2	—	„ skimmed,	—	—	—	—
Cream, ...	24	—	9	—	„ sweetened,	14	—	—	—
Cream, artificial,	1	—	—	—	„ dried, ...	8	—	—	—
Cream of Tartar,	33	—	9	—	„ dried, and	—	—	—	—
Currants, ...	15	—	4	—	„ virol, ...	1	—	—	—
Custard Powder,	2	—	2	—	„ evaporated,	—	—	—	—
Dripping, ...	21	—	18	—	„ full cream,	—	—	—	—
Egg Macaroni, ...	4	—	—	—	„ unsweetened,	8	—	—	—
Egg Yolk, ...	1	—	—	—	„ skimmed, ...	12	—	7	—
Emulsion of Cod	—	—	—	—	„ sweet, ...	2,223	84	818	16
„ Liver Oil, ...	12	—	—	—	Mince, ...	24	12	62	34
Essence of Coffee	—	—	—	—	Mincemeat, ...	4	—	—	—
„ and Chicory, ...	—	—	2	—	Mustard, ...	12	—	5	—
Essence of Rennet,	4	—	—	—	Oatmeal, ...	1	—	1	—
Extract of Malt and	—	—	—	—	Oil, camphorated,	27	1	2	1
„ Cod Liver Oil,	12	—	—	—	„ castor, ...	6	—	—	—
Figs, ...	1	—	2	—	„ cod liver, ...	4	—	2	—
Fish, paste, ...	9	—	—	—	„ eucalyptus,	7	—	1	—
„ preserved,	1	—	—	—	„ olive, ...	29	—	4	—
Flour, bermaline,	3	—	—	—	Ointments, various,	24	2	1	1
„ self-raising,	17	—	14	—	Paregoric, ...	4	—	—	—
Flowers of Sulphur,	3	—	3	—	Peas, canned, ...	3	1	3	—



Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Pears, canned, ...	2	—	—	—
„ dried, ...	1	—	—	—
Pepper, ...	1	—	—	—
„ black, ...	5	—	4	—
„ white, ...	32	—	15	—
Pickles, ...	—	—	1	—
Pie Meat, ...	—	—	1	1
Pineapple, canned,	1	—	—	—
Preserves, ...	14	2	4	—
Preserving Meal,	3	—	—	—
Prunes, ...	18	—	8	—
Raisins, ...	1	—	3	—
Rice, ground and	—	—	—	—
whole, ...	3	—	6	—
Rum, ...	56	5	8	1
Salts, medicinal,	7	—	—	—
Sardines, ...	1	—	—	—
Sauces, various,	4	—	2	—
Sausage Meat, ...	2	1	14	3
Sausages, ...	17	2	20	3
Sponges, ...	3	—	—	—
Suet, shredded, ...	1	—	4	—

Nature of Sample.	Informal.		Statutory.	
	Number taken.	Number non-genuine.	Number taken.	Number non-genuine.
Sugar, ...	1	—	3	—
Sultanas,...	47	1	16	—
Sweet Spirits of	—	—	—	—
Nitric, ...	4	—	—	—
Syrup of Ferrous	—	—	—	—
Iodide, ...	3	—	—	—
Tapioca, ...	1	—	6	—
Tartaric Acid, ...	15	—	3	—
Tartar Substitutes,	17	6	—	—
Tea, ...	20	—	2	—
Tincture of Iodine,	9	—	1	—
Tomato Puree, ...	—	—	2	—
Tripe, fresh, ...	3	—	—	—
Vinegar, ...	5	—	2	—
Vitamine Malt, ...	—	—	1	—
Whisky, ...	168	19	28	7
Wine, alcoholic,	4	—	—	—
Wine of Iron	—	—	—	—
Citrate, ...	—	—	1	—
Wine, non-alcoholic,	15	—	2	—
<hr/>				
3,913    142    1,355    68				
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## THE FOOD AND DRUGS (ADULTERATION) ACT, 1928.

DETAILS OF SAMPLES IN WHICH PROCEEDINGS WERE INITIATED  
DURING YEAR 1930.

Number of Complaints.	Nature of Sample and alleged Offence.	Number of Convictions.	Amount of Fines imposed.			Number dismissed or found "Not proven."	Number deserted simpliciter.	Number withdrawn and Expenses paid.	Amount of Expenses paid.		
			£	s.	d.				£	s.	d.
1	Camphorated Oil—Deficient in Camphor, ...	1	2	0	0	—	—	—	—	—	—
1	Cream Cheese—Prepared from partially Skimmed Milk, ...	1	3	0	0	—	—	—	—	—	—
5	Milk (Sweet)—Deficient in Milk Fat, ...	5	38	0	0	—	—	—	—	—	—
3	„ „ Deficient in Milk Fat, and in Milk Solids other than Fat, ...	3	27	0	0	—	—	—	—	—	—
1	„ „ Failing to have Name and Address of Vendor on Vehicle, ...	1	0	10	6	—	—	—	—	—	—
25	Mince—Contained Sulphite Preservatives during proscribed period, ...	25	81	0	0	—	—	—	—	—	—
3	„ „ Contained Excess of Sulphite Preservatives during permitted period, ...	3	12	10	0	—	—	—	—	—	—
1	Pie Meat—Contained Sulphite Preservatives, ...	1	2	0	0	—	—	—	—	—	—
1	Rum—Contained Excess Water, ...	1 (Admonished)	—	—	—	—	—	—	—	—	—
3	Sausages—Contained Excess of Sulphite Preservatives, ...	3	8	0	0	—	—	—	—	—	—
3	Sausage Meat—Contained Excess of Sulphite Preservatives, ...	3	7	0	0	—	—	—	—	—	—
7	Whisky—Contained Excess Water, ...	7	27	10	0	—	—	—	—	—	—
1	White Precipitate Ointment—Deficient in Mercuric Ammonium Chloride, ...	1	2	0	0	—	—	—	—	—	—
55			55	£210	10 6	—	—	—	—	—	—

# ABSTRACT OF PROCEEDINGS UNDER OTHER THAN THE FOOD AND DRUGS ACT.

Nature of Alleged Offence.	Number of Complaints.	Number of Convictions.	Amount of Fines imposed.	No. dismissed or found "Not Proven."
Merchandise Marks Acts and Orders—				
Imported Raw Tomatoes—Failing to label with indication of origin, ... ..	9	9	£9 0 0	—
Imported Hen Eggs in shell—Did not conspicuously bear an indication of origin, ...	2	—	—	2
Imported Hen Eggs in shell—Removing indication and applying a false description, ...	2	2	15 0 0	—
Imported Fresh Apples—Failing to label with indication of origin, ... ..	2	2	4 0 0	—
Swedish Butter—Describing same as extra special Danish Butter, ... ..	1	1	3 0 0	—
Milk and Dairies (Scotland) Order, 1925—				
Using milk bottles other than own, ... ..	10	10	24 0 0	—
Transferring milk from one vessel to another at a railway station, ... ..	1	1	2 0 0	—
Using Ice-cream shop as a dwelling-house, ...	1	—	—	1
Milk and Dairies (Amendment) Act, 1922—				
Selling milk containing added colouring matter,	1	1	2 0 0	—
	29	26	£59 0 0	3

## SECTION XI.

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### AIR PURIFICATION.

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#### SMOKE ABATEMENT.

The systematic routine work of the smoke inspectors, based on an intimate knowledge of the various types of steam boilers and furnaces, the fuels used therewith, and process conditions generally, connected with the industrial chimneys of all districts of the city, has resulted in the year 1930 again being one of uniform progress. It is a matter of satisfaction that public opinion is alive to the necessity for more stringent control over the emission into the atmosphere of the impurities which presently pollute it. Various Local Authorities intimately concerned, together with the Scottish Branch of the National Smoke Abatement Society are again taking active steps to secure for Scotland an Act whose scope and provisions will be similar to those of the 1926 English Act.

Towards the latter part of the year conditions were abnormal owing to threatened trouble in the coal industry. There was much disorganisation in fuel supplies, with consequent recourse to the use of inferior fuels of low calorific values and high ash content. This in many cases necessitated forced firing of boilers and furnaces, with the accompanying emission of excessive smoke. It is being continually noted by the inspectors during their inspections, that plant owners and operatives are more consistently putting into practice the technical advice offered, and this factor enabled the users to cope more successfully with the various unsuitable types of fuels experienced during the above period.

*Summary of Work.*—The following is a summary of the work of the Smoke Inspection Staff, during the year :—

Number of Inspections of Steam Boilers and other Furnaces,	1,436
„ Observations of Chimneys, ... ..	28,464
„ Intimations of Excess Smoke given, ... ..	342
„ Warning Notices Issued, ... ..	16

*Prosecutions.*—During the year 35 prosecutions were taken before the Stipendiary Magistrate in the Central Police Court. As has been stated previously in these reports, prosecutions are only resorted to when other means to induce furnace users to effect improvements either in plant, fuels, or management have been without success, and they persistently emit smoke from their chimneys without regard to the standard set by the Health Committee. Of the above number,

31 were convicted and fines totalling £44 10s. 6d. were imposed. The total consists of 19 first offences (i.e., outwith the previous five year period) with an average penalty of 18s. 5d., and in 4 cases the respondents were admonished; 4 second offences with an average penalty of £2; 4 third offences with average penalty of £2 7s. 6d.; 3 fourth offences with average penalty of £2 6s. 8d.; and 1 sixth offence, penalty £2 10s. The maximum penalty is £2 for a first offence and £5 for any subsequent offence if committed within five years of the immediately previous one. In three of the above cases, relating to steam road vehicles, a decision of "Not proven" was given, and in one other, a verdict of "Not guilty" was given.

*Improvements.*—Considering the general stringent condition of trade for a number of years past and the increasing reluctance on the part of plant owners and users to spend money on additions or alterations, no matter how necessary they may be the number of improvements coming under the notice of the inspectors for the past year was fairly satisfactory. The following is a list of these and the headings under which they come:—

Number of New Steam Boilers installed to give increased power, ... ..	20
Number of Mechanical Stokers fitted to Steam Boiler Furnaces, ... ..	5
Number of secondary Air Smoke Preventers fitted to Steam Boiler Furnaces, ... ..	9
Number of Furnaces in which anthracite, coke, or other non-bituminous fuel has been substituted for ordinary coal, ... ..	20
Number of Steam Boilers adapted for the smokeless combustion of oil fuel, ... ..	1
Number of Steam Boilers replaced by Electric Motors (using Corporation power), ... ..	3
Number of New Chimneys erected, or existing Chimneys heightened to give increased draught to carry gases higher, ... ..	14
Number of Improvements to Furnaces not coming under any of the above headings, ... ..	6

As an indication of the substantial nature of some of the improvements completed during the year and at present being carried out, a few instances might be cited as examples.

A large firm of wire-cloth weavers in the Govan area have electrified at considerable cost all their wire-annealing furnaces. These furnaces were previously heated by bituminous fuel, and the reputation of the chimneys connected with them was far from satisfactory and had been the subject of prosecution.

As was mentioned in last year's report, a Corporation department has an elaborate scheme under consideration, and a notable start has been made at one of its stations by the conversion of a hand-stoked boiler, burning a small bituminous fuel, to mechanical stoking of a



non-bituminous fuel, and at the same time a mechanical grit collector has been fitted, together with an efficient type of C.O.2 recorder. The chimney connected therewith was for a long period the subject of many complaints regarding excessive smoke and grit emission. The chimney is now smokeless and the gritty material discharged has been reduced to a negligible amount.

An important firm of carpet manufacturers in the Eastern district has installed in one of their factories a large water-tube boiler of the most modern type, fitted with chain-grate mechanical stoker. This central unit displaces three older type boilers, two of which were hand stoked. Another of this firm's factories has been completely rebuilt and in this case two large water-tube boilers, mechanically stoked, have displaced five older type boilers which were hand fired. The chimneys connected with these plants prior to alteration, were not altogether satisfactory, but are now practically smokeless.

An extensive programme of electrification is under way at the harbours, by both the Clyde Navigation Trustees and the L. M. & S. Railway Co., and will soon be completed. Large electric coaling cranes and conveyors, and heavy duty loading cranes are replacing older steam and hydraulic appliances, thereby displacing a number of large hand-fired steam boilers, the chimneys of which have been far from satisfactory.

Improvements of the above nature indicate that manufacturers and power users, particularly in large capacity plants, have realised that the older and more inefficient methods of fuel combustion and power generation are most uneconomical, and that in order to operate successfully under the increasingly exacting conditions of modern business, only up-to-date installations, giving high thermal efficiencies with almost smokeless combustion, can compete, together with the greatest possible use being made of electricity as the power medium.

*Steam Waggon and Tar Melters.*—An increased number of prosecutions were taken against steam waggon owners during the year as compared with past years, and the police departments in all divisions of the city were very vigilant in their efforts to stem the intolerable nuisance caused when these vehicles are unskilfully or carelessly stoked. Many complaints emanating from this source were received by both this department and the police. As has been already stated the smoke emitted from the funnels of steam road vehicles is much more immediately offensive than smoke of a similar density being emitted from a stationary chimney, because such emissions occur at only eight to ten feet above street level. Excessive smoke emission, coupled with grit, in busy city streets where there is much manœuvring of traffic—apart from health considerations—constitutes a positive danger, and this is now fully recognised. Clause 6 of the Motor Vehicles (Construction and Use) Regulations, 1931, provides new legislation to deal with offences of this nature, and it is under these regulations that all prosecutions will now possibly be taken. A contributory cause in many of the cases taken is the use of unsuitable bituminous fuels and in

the remainder it is the sole cause. The furnaces of both steam road vehicles and tar and pitch melters are not designed for the smokeless combustion of bituminous fuels, on account of the confined combustion spaces and lack of provision for the admission of the adequate air supply to oxidise the volatile gases. In my opinion the designers do not intend that such fuels should be used, otherwise the above requirements would be better provided for. The makers of one of the prominent types of vehicles recommend in their catalogue that good quality gas coke is the most suitable fuel to use. Many owners use it, others use one of the "smokeless" fuels on the market, while others again employ a mixture of either of these with a semi-anthracite fuel with highly-successful results. Until this practice becomes universal or is enforced by legislation there are likely to be recurrences of the offence.

There were no prosecutions against tar melters during the year, although a number of firms were warned—in every case owing to allowing their local stock of coke to run out and temporarily substituting ordinary raw coal. The use of coke is now general, and in Corporation contracts obligatory, and it is only on occasions as stated that any trouble has been experienced by the inspectors.

*Shipping in the Harbour.*—The shipping in the docks and river were under routine observation during the year, and in a number of cases special attention was given to individual vessels and localities from and in which it was reported or suspected that excessive smoke was being emitted. None of the vessels visited was the subject of prosecution, but a number of intimations were served in respect of cross-river traffic and vessels at berths. In the case of two large ocean-going ships proceedings would have been instituted but for the fact that in both cases a sudden breakdown in the forced draught systems had been the primary cause of the excessive smoke emissions. The defects were expeditiously remedied after the inspector's complaint.

*Complaints Investigated.*—A considerable part of the smoke inspector's time is devoted to the investigation and remedy of the increasing number of complaints received each year. Public education in the health aspect of environment is increasing, and it would appear that the complaints will generally be *pro rata*. People are now less inclined to submit to any seeming nuisance existing adjacent to their dwellings. The primary causes of most of the complaints received were the use in small plants of unsuitable types of fuel, or the chimneys connected therewith not being sufficiently high to carry the gases clear of the adjacent dwellings or vicinity, as required by the Glasgow Buildings Regulations Act, 1900. A number of the complaints were of a minor nature and easily remedied, while in most of the cases, structural improvements to plants, erection of higher chimneys, substitution of non-bituminous fuel for the bituminous in use, adoption of gas as the heating medium, &c., effected a permanent improvement. Advice on these various points is always offered by the inspectors. A number of the investigations involved large plants and several radical alterations, involving considerable sums of money, were effected.

*Soot-Collecting Gauges.*—There are nine collecting stations suitably situated in the public parks in all districts of the City. The mean fall of atmospheric impurities, consisting of soot and dust, as indicated by the gauges, amounted to 273.58 tons per square mile for the year 1930 as against 278.2 tons for the preceeding year, showing a decrease of 4.62 tons per square mile. This figure when compared with the previous six years average of 287.10 tons per square mile indicates a reduction for 1930 of 13.52 tons per square mile. It has been stated in recent reports that not only the total rainfall, but also the incidence of the wet periods, has a direct bearing on the precipitation figures recorded. *The mean monthly rainfall during 1930 was 79.12 millimetres, while the monthly mean for the six years period was 75.36 millimetres.* A comparison between the six summer and the six winter months of 1930 shows that the mean monthly precipitation during the latter period was .82 tons per square mile heavier than that during the former months; the mean monthly rainfall being 72.99 millimetres and 85.26 millimetres respectively, or a difference of 12.27 millimetres.

The table appended hereto gives the average monthly deposit of each element of atmospheric pollution for the year.

*Classes on Smoke Abatement and Furnace Management.*—The work of the classes is an important supplement to the technical and practical advice given daily by the inspectors in the course of their duties. Evidence of the interest being taken in the subject by the firemen and plant attendants of the city is shown by the continued large number of men attending the classes. The classes are held under the auspices of the Scottish Branch of the National Smoke Abatement Society and meet on one evening of the week during the six months session, the fifteenth of which concluded during March. Two classes (an ordinary and an advanced meeting on alternate weeks) were carried on, at each of which twelve lectures were given, a total of twenty-four, the members paying the usual nominal fee of 2s. 6d. The class examinations were held after the conclusion of the session. One hundred and one men enrolled, a number almost up to the outstanding record of one hundred and ten, for session 1929–30, and the attendance reached the high average of 82.68 per cent. Forty-seven men came forward to the examination held on 14th March to compete for the prizes allocated to each class. Merit certificates are gained by those having not less than 70 per cent. possible marks and full attendance certificates are given to those who qualify for these. Thirty-one men in the ordinary class and five in the advanced class gained merit certificates, while a total of 42 members qualified for full attendance certificates. The prizes and certificates will be presented at the annual social meeting to be convened by the Branch during May.

THOS. M. ASHFORD,  
*Senior Smoke Inspector.*

*April, 1931.*

# AVERAGE DEPOSIT OF EACH ELEMENT OF ATMOSPHERIC POLLUTION FOR EACH MONTH OF 1930.

			English Tons per Square Mile.																	
Month.	Rainfall in Millimetres.	Tar.	Insoluble Matter.				Soluble Matter.				Included in Soluble Matter			Total Solids.						
			Carbonaceous other than Tar.	Ash.	Total Insoluble Matter.	Loss on Ignition.	Ash.	Total Soluble Matter.	Total Solids 1930.	Sulphate as S.O. <sub>3</sub> .	Chlorine as Cl.	Ammonia as N.H. <sub>3</sub> .	1929.	1928.	1927.	1926.	1925.	1924.		
Mean	9 Stations	120.98	-10	2.66	5.63	8.11	4.50	8.13	12.63	21.04	4.48	2.80	-40	24.19	34.13	26.63	23.57	24.16	23.22	
"	"	January,	6.24	-50	5.80	11.51	17.81	1.10	1.74	2.84	20.65	1.10	.28	-04	17.68	26.08	21.60	19.32	19.99	14.12
"	"	February,	63.07	-39	4.26	9.91	14.56	2.95	5.03	7.98	22.54	2.95	1.08	-42	21.51	24.58	18.58	21.48	17.28	22.07
"	"	March,	25.63	-37	3.81	9.77	13.95	1.80	3.90	5.70	19.65	2.14	.47	-26	20.88	18.03	24.85	18.63	26.02	25.97
"	"	April,	36.85	-24	3.47	7.28	10.99	1.75	4.38	6.13	17.12	1.96	.52	-17	22.64	24.56	22.17	20.97	28.75	31.94
"	"	May,	59.78	-23	4.89	10.97	16.09	2.90	7.27	10.17	26.26	3.33	.63	-29	23.81	28.41	31.25	19.92	15.98	20.88
"	"	June,	86.35	-12	3.23	7.53	10.88	5.63	5.60	11.23	22.11	3.09	.61	-81	17.73	20.97	26.87	29.90	23.04	28.65
"	"	July,	124.14	-18	3.89	8.27	12.34	3.81	10.34	14.15	26.49	4.27	1.20	-33	30.07	23.08	54.45	20.79	23.22	21.33
"	"	August,	105.20	-22	4.31	8.63	13.16	3.39	6.15	9.54	22.70	3.28	.56	-16	15.10	18.25	25.16	19.82	18.40	24.32
"	"	September,	117.04	-06	3.15	5.62	8.83	4.75	8.13	12.88	21.71	4.16	.23	-23	26.13	31.28	32.86	22.38	24.17	26.51
"	"	October,	117.25	-24	4.33	9.40	13.97	3.65	7.05	10.70	24.67	3.75	2.38	-14	29.42	23.85	19.90	39.94	14.30	23.86
"	"	November,	86.97	-08	4.87	8.39	13.34	5.98	9.32	15.30	28.64	4.23	1.66	-58	29.04	23.63	13.12	19.16	36.30	19.78
"	"	December,																		
Yearly Deposit in Tons per Sq. Mile.			2.73	48.67	102.93	154.33	42.21	77.04	119.25	273.58	38.74	12.22	3.83	278.20	296.85	317.44	275.88	271.61	282.65	
Monthly Mean of all Gauges.			79.12	-23	4.05	8.58	12.86	3.52	6.42	9.94	22.80	3.29	1.02	-32	23.19	24.74	26.45	22.99	22.63	23.55



## SECTION XII.

## GENERAL SANITARY OPERATIONS.

## LACK OF WATER SUPPLY, SANITARY CONVENIENCES, &amp;C., IN DWELLING-HOUSES.

In the report for 1929, there was included in this section a statement showing the number of houses provided with water supply and other sanitary conveniences in common with other tenants. This year a detailed comparison is made of the position now as compared with that existing in 1925. The various columns in the statement below indicate (a) the numbers as at December, 1925, and (b) those at December, 1930, for both the extended city and the old city as it would have been without the extension which took place in 1926.

## STATEMENT SHOWING WATER-CLOSET ACCOMMODATION, &amp;C., USED IN COMMON, 1930-1931.

	No. at 31/12/25	+	-	No. at 31/12/30	
				Extended City.	Old City.
Privies replaced by w.c.'s, 1/1/20 to					
31/12/25, ... ..	24	—	—	23	23
Privies remaining at 31/12/25,*	—	—	—	—	—
Earth closets, ... ..	2	7	—	9	2
Privy-middens, ... ..	45	45	9	81	36
W.C.'s serving 2 tenants, ...	6,227	8	264	5,971	5,963
„ 3 „ ... ..	18,707	21	225	18,502	18,482
„ 4 „ ... ..	8,243	18	588	7,673	7,655
„ 5 or more, ... ..	2,048	13	241	1,820	1,807
Dry closets serving 1 tenant, ...	62	71	40	93	22
„ „ 2 tenants, ... ..	35	12	13	34	22
„ „ 3 „ ... ..	16	14	1	29	15
„ „ 4 „ ... ..	12	1	8	5	4
„ „ 5 or more, ... ..	17	2	10	9	7
Privy-middens serving 1 tenant, ...	11	20	14	17	—
„ „ 2 tenants, ... ..	7	9	2	14	5
„ „ 3 „ ... ..	5	5	4	6	1
„ „ 4 „ ... ..	9	3	8	4	1
„ „ 5 „ ... ..	9	31	—	40	9
Ashpits serving 2 tenants, ... ..	16	7	—	23	16
„ 3 „ ... ..	6	4	1	9	5
„ 4 „ ... ..	12	9	—	21	12
„ 5 or more, ... ..	3,562	48	80	3,530	3,482
Houses without water supply—					
1 apartment, ... ..	850	59	268	641	582
2 apartments, ... ..	498	131	142	487	356
3 or more apartments, ... ..	39	6	8	37	31
Houses provided with baths, ...	59,931			81,947	
Total houses, ... ..	241,519				258,440

\* Includes factories and workshops.

The statement shows the position as existing in 1925 and as it is now for the enlarged city. The boundaries were extended in 1926 when 10,328 acres were added to the city, with the relatively



small population of 16,237 persons as at the 1921 census. The more populous districts were small, such as Carntyne, Millerston, Lambhill, Knightswood, Scotstoun and Yoker, on the north side of the river, and Kennishead, Mansewood, Nitshill, Crookston, and Cardonald on the south. It is in such areas that the problem of providing water supply and conveniences presents many difficulties.

In order to give a true comparison with five years ago, it is necessary to show the number of houses with water-closets, &c., used in common added to the city under the extension of boundaries just referred to, and a column showing the reduction, or, in other words, the improvement that has taken place in the interval. The figures in italics indicate the position as it would have been in the city before extension of boundaries in 1926.

As is to be expected, in the added areas there was a considerable number of privy-middens (45) which doubles the number formerly existing; with the removal of nine there are now 81 remaining.

It is obvious that, although operations under slum clearance schemes are removing many of the worst examples, there exists a very large number of dwelling-houses in the city provided with water-closets in common. This is illustrated in the following table :-

	No. of water-closets.	No. of houses involved.	Estimated No. of persons involved (taking 4 persons per house)
Water-closets serving 2 tenants,	5,971	11,942	47,768
"      "      3      "	18,502	55,506	222,024
"      "      4      "	7,673	30,692	122,768
"      "      5      "	1,820	10,000	40,000

The numbers shown in the return indicate that in 264 instances water-closets used by two families have been removed; 225 serving three; 588 serving four; and 24 serving five or more dwelling-houses. The numbers of dry closets, privies, and privy-middens are not large, even with those added to the city in 1926, and as these are situated in outlying districts there is not the same possibility of nuisance arising. Ashpits used in common (3,683) are not so objectionable and these are gradually being replaced by ashbins.

With regard to water supplies serving more than one tenant, most of these in the old city were situated in agricultural districts on the outskirts, and although a fairly large number, 196, were taken over in the added areas, improvements were made in 418 instances, so that the total 1,165 is definitely lower than 1,387 in the return for the city before the 1925 extension of boundaries.

The number of houses provided with baths has shown a decided increase, mainly due to modern standards in house building.

*Dogs in Housing Schemes and Nuisances.*—At their meeting on 7th March, 1930, the Housing Sub-Committee on Properties remitted to me to report on a motion that "no dogs be allowed to be kept by tenants at the various housing schemes." The following report was submitted :—

## DOGS IN HOUSING SCHEMES AND NUISANCES.

I have had enquiries made by the Divisional Sanitary Officers, and there is no evidence that nuisance or annoyance caused by dogs is any greater in the Corporation Housing Schemes than is the case in the city generally. The complaints received by the Department in the past have not been numerous, although some of them have been very bitter, particularly by those who have the unpleasant duty of keeping clean pavements, coping stones, or footpaths fouled by their neighbours' dogs. This refers chiefly to the residential areas throughout the city. If the public were aware that any powers existed for dealing with this form of nuisance, no doubt formal complaints would be more numerous. The keeping of dogs under these conditions undoubtedly gives rise to a most disagreeable form of nuisance, while from time to time householders complain of the fouling of closes, stairs, and back courts. As this is a Police offence, these complaints have been referred to the Police authorities.

With regard to Housing Schemes, nuisances due to the soiling of footpaths, greens, closes, and stairs in the various schemes are only occasionally the subject of complaint. At times the footpaths are soiled considerably, but whether this is caused by dogs owned by persons in the schemes, it is difficult to say. As regards the cottage type of housing scheme, I understand that the Manager of the Improvements Department receives frequent complaints as to vicious or destructive dogs, and that annoyance is occasioned by dogs scraping up the gardens and destroying plants, although here fouling of footpaths is not so much in evidence, owing to the more open nature of the sites. The Manager would no doubt forbid a tenant to keep an animal with destructive propensities.

Although in certain parts of the city, particularly in the residential tenement areas, the fouling of pavements, &c., by dogs reaches an objectionable degree, it cannot be alleged that injury or danger to health results therefrom. The matter is rather one of amenity. The feature which is most objectionable to householders is that it is rarely the person responsible for nuisance created by dogs who has to perform the duty of cleaning the pavements, &c.

It is difficult to suggest an effective remedy. The difficulty about prohibiting the keeping of dogs in housing schemes is that the same prohibition might with equal reason be applied throughout the city. I am unable to suggest any principles on which their numbers might be reduced, though, of course, breeding of dogs or the keeping of more than one might be prohibited.

In November, 1927, the Health Committee remitted the question of nuisance caused by dogs in the city to the Magistrates Committee, who in turn remitted it back to the Committee on Health for further consideration. The Health Committee on 8th February, 1928, agreed to recommend that no further action be taken in connection with the matter. The matter seems to be one which should be dealt with by a Police bye-law.

*30th April, 1930.*

## OFFENSIVE TRADES.

There were on the register of offensive trades in the city at 31st December, 1930, 69 businesses, a decrease of one since the beginning of the year.

The nature of these businesses was as follows:—

	1930.	1929.
Bone boilers, ... ..	8	8
Tallow melters, ... ..	21	21
Manure manufacturers, ... ..	8	8
Gut cleaners, ... ..	3	3
Hide and skin factors, ... ..	8	8
Soap boilers, ... ..	10	10
Tanners, ... ..	7	7
Glue and size manufacturers, ... ..	2	3
Horse slaughterer, ... ..	1	1
Knacker, ... ..	1	1
Tripe cleaner, ... ..	—	—
	<hr/> 69 <hr/>	<hr/> 70 <hr/>

During the year a number of applications were made for registration or renewal of registration of premises for carrying on of offensive trades.

*Horse Slaughterers or Knackers.*—The annual statutory renewal of licences for the carrying on of the businesses of slaughterers of horses and knackers were again granted in respect of two establishments in the northern district of the City.

*Tallow Melters.*—Application was made by an old established tallow melting firm in the eastern district of the city to make certain alterations and additions to their present premises. As conditions had been unsatisfactory during the year, and the proposed alterations indicated a probable aggravation of the nuisance rather than an improvement, sanction was withheld.

*Skin Curer.*—A small experimental plant was set up in suitable premises in the south-western district of the city for the dressing of fish, lizard and snake skins for preparation as leather. The raw skins are submitted to various processes of steeping in chemical solutions, descaling, dressing and drying, and with suitable arrangements for the disposal of refuse, do not give rise to any nuisance. The business was kept under observation for a short period, but was not regarded as coming under the category of an offensive trade.

## DISINFECTION.

The following tables summarise the washings and disinfections carried out at Ruchill and Belvidere Disinfecting Stations during the year 1930:—

	Belvidere.	Ruchill.	Total.
Number of washings, ... ..	9,334	7,662	16,996
Average number per day, ... ..	30.3	25.0	55.3
Articles washed and disinfected, ...	310,199	307,476	617,675
Average number of articles per washing,	33.2	40.1	36.3
Fuel consumed (tons), ... ..	654	602	1,256
Fuel used per article (lbs), ... ..	4.72	4.38	4.55
Soap and powder used per article (ozs),	.31	.29	.60
Disinfectant               "       "       "	.43	.51	.94

NUMBER OF WASHINGS, ARTICLES DISINFECTED, &C., FOR YEARS  
1921-30 INCLUSIVE.

	Washings.	Articles.	Sprayings.	Whitewashings.
1921, ... ..	18,060	655,867	19,196	21
1922, ... ..	14,837	533,450	9,418	21
1923, ... ..	14,423	526,285	8,008	2
1924, ... ..	14,690	510,275	8,405	3
1925, ... ..	14,408	530,777	8,473	2
1926, ... ..	15,992	620,038	9,806	—
1927, ... ..	16,323	648,516	10,495	2
1928, ... ..	15,135	584,257	9,219	—
1929, ... ..	14,593	590,676	10,076	27*
1930, ... ..	16,996	617,675	12,222	17

Books disinfected, 1,641.

\* Includes 13 limewashing of ash-bin shelters in connection with an outbreak of dysentery.

*Fumigation of Vessels.*—Most of the fumigations of vessels for disinfection of rats are done by this department. Information regarding this matter is given in the report of the work of the Port Local Authority, which forms Section IX.

*Disinfection of Second-hand Clothing, &c.*—Disinfection of second-hand clothing for export to Ireland, as required by the regulations issued by the Irish Free State, continued through the year. In all, 2,026 consignments were disinfected and certificates issued, the total amount received in respect of charges being £444 19s. 1d.

*Disinfection of Straw Coverings.*—In order to comply with the regulations of various countries, the arrangements for the disinfection and certification of straw coverings were continued during the year. No additional names have been added to the list of those providing suitable chambers for this purpose, and the former arrangement whereby the Department is notified when a supply of packing is to be disinfected continued. Odd lots required by firms whose volume of



business is small are dealt with at the Local Authority Disinfecting Stations. During 1930 certificates numbering 150 were issued against 140 for the preceding year.

A case of poisoning by inhalation of fumes or vapour occurred in a workman employed in disinfecting houses. The spraying mixture contained nitro-benzene ( $C_6H_5NO_2$ ) and the vapour induced severe illness, indicative of gas poisoning. The patient subsequently made a good recovery. The use of a spraying mixture containing nitro-benzene should be carefully controlled by one who understands its chemical and toxic properties.

*Notes on Nitro-Benzene ( $C_6H_5NO_2$ ).—*Nitro-benzene has an odour somewhat like oil of bitter almonds. It is a powerful narcotic. It causes headache, drowsiness, flushing of face, dyspnoea, irregular pulse, dilation of pupils, loss of voluntary power of movement, coma, convulsions, and sometimes death. The condition might be mistaken for alcoholism, and in later stages for cerebral hæmorrhage. Death may happen from five to eight hours after first exhibition of symptoms.

*Post-mortem.*—Hyperæmia of brain and membranes, dark-coloured fluid state of blood, and engorgement of right heart.

After absorption it can be found in the body fluids and urine in the form of aniline.

## GENERAL SANITARY OPERATIONS.

The reports by the Divisional Sanitary Inspectors are included in this section; they deal with the work of the department as given in detail in Table XXIII. of the Appendix, which contains tabulated particulars of inspections, nuisances, &c., in each municipal ward and for the city. References are made to the principal statistics for each division, and comments are made on the more important complaints or problems arising during the year.

## CENTRAL DIVISION.

There has been no extensive slum clearance scheme in the Central Division during the past year, and opportunity has been taken to have many minor improvements carried out, and also to make a somewhat extensive survey for the purpose of tabulating particulars regarding each property. In many properties improvements have been secured, such as opening up of back courts by clearing away unused or dilapidated cellars and outbuildings, the abolition of large, foul ashpits, and the substitution of ashbins in suitable shelters. In Partick area, although there now exist powers to require the provision of ashbins in lieu of existing ashpits, action has been taken in the case of the more dilapidated ashpits by convening a meeting of interested parties at the property to secure the replacement of ashpit by ashbin. In a number of tenements a common water supply was replaced by water supply and sink introduced to each individual house.



Disused tenement wash-houses are a prolific source of nuisance. Where they are inadequately secured they become dumping grounds for all manner of refuse and havens of refuge for stray cats. The water fittings are continually being tampered with by children, causing flooding and waste of water. In several instances where dilapidated disused wash-houses were so situated as to interfere with the free lighting and ventilation of ground flat houses the owner was prevailed upon to have them demolished. The powers contained in the Building Regulations Act to require the repair of wash-houses does not extend to the areas added to the city under the Boundaries Acts of 1912 and 1925. Partick area is thus debarred from the advantages of this provision. Disputes and complaints regarding dirty closes, stairs, and water closets seem to be as numerous as ever. Court proceedings had to be taken in fifteen cases and fines ranging from 2s. 6d. to 20s. were imposed.

It may be of interest to refer to some of the more uncommon complaints dealt with during the year. An urgent call regarding smells from a refrigerator in a fish shop in a new property was received. The odour was ultimately traced to the inferior quality of paint used in covering the ammonia pipes. Scraping of the pipes and re-coating with a superior material proved effective. In two instances complaints of ineffective flushing of water-closets were traced to the presence of superfluous traps which had been left *in situ* when former conveniences of the "pan" type had been replaced by water-closets of modern design.

The source of an intermittent smell of gas in the janitor's house at a school was traced and remedied after much investigation of gas and drainage systems. It was ultimately found that the opening in the wall of the house made to admit the drain, the water, and gas pipes was acting as a channel of entrance from the defective gas pipe outside. The leakage was made intermittent by the weather. If dry the gas escaped and passed into the house through the opening in the wall. In wet weather the clay soil effectively closed the defect in the pipe.

In a property in Partick a tenement bathroom common to several families was found to exist, complete with hot and cold water. One tenant, from the range in his house, provides the hot water supply, and by arrangement the others contribute to the cost of coal.

It is a common practice with owners on whom notice is served to cleanse and limewash the walls of close and staircase, to limewash the upper part of the walls and leave the lower part to be cleansed by the tenants. A case of this kind was brought into court, and a conviction obtained for failing to cleanse the lower portions of the walls.

The common water-closet is a prolific source of nuisance. Its abolition and the provision of a private convenience in each house is now the standard set by sanitary authorities. The great advantage of this has been amply demonstrated by experience in slum clearance and rehousing. In slum properties such reports as the following were

of daily occurrence :—" Common W.C. on stair choked, filth flooding compartment and lobby "; " Drain choked ; court flooded with sewage "; " Cistern of W.C. on first flat out of repair ; no water for flushing." In the rehousing schemes to which the former residents of the slums have removed, and in which each family has a private convenience, such complaints are rare. Moreover, the whole aspect from the point of view of cleanliness has changed ; children seem to have rapidly learned better habits through having the internal sanitary convenience, and closes, stairs, and courts are not fouled to the same extent as under former conditions. Where the common water-closet is inconveniently situated, as in the back court, slop pails are resorted to during the night.

The water-closet used in common has had its day. Previous to the passing of the Glasgow Police (Amendment) Act, 1890, few common water-closets existed, each tenement having a " pan " privy or a " drop " privy in the court. The introduction of the water-closet under the above act revolutionised the sanitary condition of the city. At that time—forty years ago—the Corporation decided that one water-closet for four families should be considered sufficient. To-day a higher standard is demanded, and the ideal is that each house should be provided with a private convenience.

*Drainage.*—At Knightswood Housing Scheme the question of the connection of subsoil drains direct to the sewer without the intervention of a disconnecting trap gave rise to some controversy. The view of the Department of Health on this subject was ascertained and was as follows :—

" The Department . . . are advised that in the varying conditions under which field drains are connected to house drains or sewers, it is not possible to aver that in no circumstance could a leakage of sewer air occur or that such leakage would not be considered insanitary or prejudicial to health. If it could be ensured that in every case all drains were sufficiently covered with soil—say to an extent of three feet—it might be definitely assumed that no leakage of sewer gas would take place, but such a depth of cover cannot always be provided in practice. In view of all the circumstances, therefore, the Department consider a proper intercepting trap should be provided in all cases where subsoil drains enter directly into house drains or into sewers."

Two important buildings—the Scottish Legal Buildings in Bothwell Street and the Dental Hospital in Renfrew Street—were in course of erection during the year, and necessitated strict supervision in the design and construction of their extensive drainage systems, while the extraordinary number of unique and up-to-date fitments in the Dental Hospital called forth the utmost ingenuity to comply with the requirements of the building regulations.

The transformation in the structure of shops in most of the principal streets, which has been noticeable during recent years has continued during the past year. The installation of modern and peculiar fitments, and the arrangement of drainage present many difficulties and call for special care.

Knightswood Housing Scheme is nearing completion. In this scheme 5,564 houses have been erected and for several years past has necessitated a great deal of time and attention on the part of the drainage inspector, due principally to the lack of transport in the early part of the job, and to neglect of detail work by the tradesmen concerned, this being almost inevitable on account of the extensive nature of the layout.

*Ticketed Houses.*—There are at present 1,231 houses of one apartment, 1,178 of two apartments, and 24 of three-apartments, a total of 2,433 ticketed houses in the Central Division. This is a decrease of 182 houses from last year, due mainly to slum clearance operations.

Twelve thousand three hundred and eighty-one visits were made during the night, and 1,215 houses were found to be overcrowded, a decrease from last year, 8.14 per cent. against 9.14 per cent. This is the lowest percentage of overcrowding in this class of house since 1921, when it was 8.03 per cent. Six thousand two hundred and twenty-two visits were made to one-apartment houses and 708 were overcrowded. In four cases the overcrowding was caused wholly by lodgers. Six thousand and twenty-seven visits were made to two-apartment houses and 488 were found overcrowded. In 21 cases the overcrowding was caused by lodgers. One hundred and thirty-two visits were made to the three-apartment ticketed houses, and 19 were found to be overcrowded. In nine of these the overcrowding was caused by lodgers. Other visits made during the night include 2,245 to farmed-out houses, 52 to houses let in lodgings, and 115 to common lodging houses and seamen's boarding houses. A considerable amount of overcrowding is still to be found in houses not in the "ticketed" class.

There is a tendency to treat overcrowding lightly, and there are tenants who remain in overcrowded houses who, by a little personal effort might better their conditions considerably. An instance may be quoted where ten persons occupied a single-apartment house with a cubic capacity for three adults. Three of the inmates, the father and two sons, were in employment, earning a substantial income. The family had resided and grown up in their present house for the past twenty years, and though able to afford a larger house were apathetic about moving to another district.

In another case the family consisted of nine adults—father, mother, and a grown-up family of seven—living in a single-room house with cubic capacity for four adults. The householder and several members of the family were in employment, while other members were receiving unemployment benefit.

There are many similar cases where overcrowding is regarded as a normal mode of life, some people regarding house room as quite a proper thing in which to economise. The practice of taking in lodgers to an already overcrowded two-apartment house is a not uncommon means of adding to the income. Sympathy might be expressed with people who through no fault of their own, or through

force of circumstances are compelled to live under conditions which are not satisfactory, but those people who neglect to better their condition when in a position to do so, at least ought to be reminded of their responsibilities. Warning letters proved to be sufficient to bring about better conditions in the particular cases quoted, as well as in others.

*Houses let in Lodgings.*—To the register of houses-let-in-lodgings in the Central Division there have been added nine occupied by Indian pedlars for the purpose of maintaining closer supervision than would otherwise be possible. The house is taken by one of the pedlars and the others pay a sum of 3s. or 4s. per week for their accommodation. There are various versions as to how those Indians began their traffic in this country. As far as can be ascertained a few came during the later years of the war. The original adventurers apparently came to this country as seamen and firemen on ships sailing out of Bombay and Calcutta. After the Armistice these men were thrown out of employment, and took out a pedlar's licence and started to hawk their wares from door to door. Others of them took advantage of the Government Repatriation Scheme and went back to India.

The pedlars obtain their merchandise—articles of imitation silk wearing apparel—from a wholesale place run by their fellow countrymen in Carrick Street. The original pedlars were quite successful, and the news spread among their friends, many of whom sold their small holdings and came to this country to be pedlars. There were as many as 150 in Glasgow at one time, but some have returned to India, having failed to make a living. The number at present in Glasgow is about seventy. At first they rented houses in the dock area, but now they have spread to other parts of the City, mainly to slum properties because the rent is cheap and because their presence is tolerated in this class of property. They are all Mohammedans, and their habits are a little peculiar. In a property where the water-closet is on the stair one may meet an Indian on his way to the lavatory dressed only in his shirt. They put on clothing only when going out to their occupation. Their taste in furnishing is simple. There is usually nothing in the house but the necessary bedsteads and bedding, cooking utensils, and a Narghili pipe.

They cook their own food in the morning before they go out. They mostly sleep in single beds, but they must have the beds hard up against one another, a peculiarity which is apt to lead to overcrowding. It is necessary also to insist on cleanliness. For these reasons it is useful to be able to register such houses as houses-let-in-lodgings. This power of registration is found useful also in the one-time exclusive residential area in the north-west district of the city, where many of the larger houses are being converted into single-roomed furnished lodgings. The sanitary arrangements are not always satisfactory. In a certain terrace of large houses which is almost wholly converted into single-room furnished apartments, there is a cooking stove in each room worked on the penny-in-the-slot



principle, and the baths provided are inconveniently situated and inadequate. The principal tenant in two of these houses, to make more room available for letting purposes, even went the length of converting a bathroom into a kitchen where the cooking was carried on, the sanitary fitments—bath, basin, and water-closet—being retained in their position.

*Farmed-out Houses.*—Constant visitation is necessary to keep this class of house up to the requirements of the bye-laws, as there tended to develop a decided slackening of attention by some of the keepers in connection with the upkeep of the furniture and furnishings. Two keepers were prosecuted for neglect, and these actions had a beneficial effect throughout the whole division.

In Ward 15 (Sandyford) in the course of routine inspection it was discovered that a house of three apartments at 92 Bishop Street and one at 307 St. Vincent Street were occupied by separate families, none of whom was the tenant. In view of the lack of domestic conveniences and for the supervision of both houses it was decided to have them declared as farmed-out houses. This was carried through in the statutory manner. The tenant was advised of the fact and invited to apply for re-registration in due course. This he refused to do, and he was summoned to appear at the Central Police Court. The stipendiary magistrate imposed a fine in respect of each house. The keeper subsequently appealed to the Sheriff to have the Corporation's resolution recalled as far as it applied to the St. Vincent Street house. The Sheriff refused the appeal on the ground that the appellant had failed to show that any change had taken place in the condition of the house since the date of the Corporation's resolution.

*Rat Destruction.*—Two thousand and seventy-three circulars were issued to occupiers of premises likely to be attractive to rats—butchers', bakers', grocers' shops, restaurants, &c. These circulars contained advice on the destruction of rats, and the making of buildings rat-proof, and also invited requests for advice regarding methods of dealing with vermin. The register of infested properties was revised; all such properties were visited, and out of 167 on the register 35 are now reported clear of vermin. During the year nine properties were made rat-proof, and in two others the work of making them rat-proof is in progress.

There are several badly-infested properties in the centre of the City; to make these rat-proof is likely to entail a considerable amount of alteration and reconstruction. The occupiers feel that the carrying out of such work is outwith their duty, and the owners are not ready to undertake it. Meantime meetings with architects and representatives of owners and occupiers are being arranged in order to carry out the necessary work. It is remarkable how few tenements of dwelling-houses seem to be rat infested. Restaurant kitchens, stables, and poultry farms are mostly affected. At one place in the business centre there is a regular rat hunt twice weekly. In others professional rat catchers are engaged to make periodical inspections. In few cases



is poison used. The keeping of cats seems to be common and effective; in stables and outlying places dogs are used, and in many restaurant kitchens the presence of a Scotch or Cairn terrier is effective. In others a gun is used with good effect. In a few cases the ferret and mongoose are used.

In one case a tenant sued the owner in the Sheriff Court for compensation for alleged damages caused to his house and person through rat infestation. The owner was able to prove that he had taken all necessary steps to clear the property of rats and to prevent their ingress to the property, and the Sheriff decided in his favour.

*Housing.*—During the year tenants occupying houses included in the 1928 Slum Clearance Scheme were rehoused and the buildings demolished, thus completing the Slum Clearance Schemes of 1923, 1926, 1927, and 1928. The total number of houses in these schemes was 1,131, containing 1,192 families. Of these families 75 per cent. were rehoused directly by the local authority, 15 per cent were substituted and the exchanges rehoused by the local authority. The remaining 10 per cent. made their own rehousing arrangements.

Two applications by tenants for certificates were made under the Rent Restriction Acts, and both were granted. The chief difficulty arises in deciding whether the house is controlled or de-controlled. In the smaller and less desirable type of house several tenants may have been in occupation since the De-controlling Act in 1923 came into operation.

Repairs were carried out in several properties, which, had there been other houses available, would have been dealt with by Closing Orders. Only in one case had the Corporation to carry out the repairs on default of the owner. The tenants in the re-housing schemes at Yorkhill and Scotstoun continue to live up to a good standard of cleanliness and house-pride, which has been commented upon in previous reports.

Complaints of dampness in the rooms of two houses in Yorkhill Scheme were made. In one case it was found that the tenant had coated the walls with varnish paint. In winter the fire is used only at night and heavy condensation on the non-porous wall results. This is unfortunate, as the painting reduces the chance of bug-infestation.

In the residential west and north-west district of the City great changes are taking place in housing conditions. Many of the larger terrace houses are being let in apartments as separate occupancies, a practice likely to give rise to public health problems in the future. Similar changes overtook the one-time residential area of Saltmarket and St. Andrew's Square, though in this case actual structural alterations took place, and the larger houses "made down" into dwellings of one or two apartments.

Section 106 of the Glasgow Building Regulations Act, 1900, provides that alterations in the mode of occupancy of houses require the consent of the Dean of Guild Court, but it appears that unless struc-

tural alterations are entailed no action can be taken to prevent a large house being let to several occupants. The Building Regulations Act of 1900 is now in course of revision.

*Factory and Workshop Inspection.*—In this department of our work a matter of some concern has arisen in connection with underground bakehouses. Of the underground bakehouses existing at the passing of the 1901 Factory and Workshop Act, twenty-four were refused registration and work therein was discontinued. Sixteen of the underground bakehouses which were registered have since ceased to be used as such. There are still twenty underground bakehouses in operation. During the past year we have found baking, or some part of the baking process, being carried out in unregistered basement premises.

Many of the kitchens or cooking places in our large restaurants are in the basement. It has always been permissible to cover pies without having the place classed as a bakehouse, but to-day a more extensive baking is carried on, scones, cakes, tarts, &c., being prepared in the kitchen.

In many of our tearooms a demand has arisen for hot scones, tarts, and cakes of various descriptions, and the owners seem to find it more satisfactory to make those on the premises. The kitchen is thus being turned into a bakehouse. Ignorance of the law on this point is the excuse put forward, and further, it is asserted, the scones and cakes which are baked are for consumption on the premises.

Full details of the work carried on throughout the year will be found in the Appendix tables.

In concluding this report I would like to record my appreciation of the work of the staff under my charge. Without exception they are reliable in the execution of their duties, zealous and willing to carry out with enthusiasm the work given them to do. One of our inspectors, Mr. Mc'Ghie, retired in November, under the Superannuation Scheme, after 35 years faithful service. Mr. Allan resigned at the close of the year on being appointed Sanitary Inspector for the Burgh of Renfrew. Both were presented with suitable tokens of esteem by the members of the Divisional Staff.

WILLIAM ROY.

12th February, 1931.

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## NORTHERN DIVISION.

*Nuisances.*—The nuisances dealt with during the year are detailed in Appendix No. XXIII. on page 348. The removal of many old and insanitary buildings within recent years has had the anticipated result of reducing the total number of nuisances to be dealt with.

As a rule, little difficulty was experienced in securing the removal of nuisances without undue delay, but an exception to the rule cropped

up in the case of a group of tenements in Cowcaddens, the responsible owners of which could not be found. Serious nuisances arising from defective drains, lack of adequate water supply, &c., had ultimately to be removed by the Local Authority, and two of the properties became so dilapidated that recently they were dealt with by the Master of Works as "dangerous" buildings. The tenants were for a considerable period in the unusual position of not having to pay any rent.

*Drainage.*—The continued and extensive house-building operations carried on in this division entailed much supervision of drainage construction. In all, nine housing schemes were in progress, and 530 applications of the smoke-test were made in connection with these and other new buildings, including eight schools. In addition, the test was applied to old properties where there was reason to believe that the drainage was defective, and the requirements of the department with regard to repairs and alterations to these were subsequently carried out by the owners concerned.

*Sanitary Conveniences.*—505 dwelling-houses, consisting of 369 of one apartment, 124 of two apartments, and 12 of three apartments and over, were demolished under slum clearance schemes during the year, and by their removal the number of common water-closets serving two, three, four, and five or more tenants was reduced by 41, 58, 59, and 6 respectively, while four privies were abolished. The number of one, two, and three-apartment houses without internal sinks and water-supply was reduced by 51, 15, and 2 respectively.

*Piggeries.*—There were at the end of the year 24 piggeries licensed for the accommodation of 3,540 pigs. Fifteen notices with reference to irregularities discovered in course of inspection were issued, and thereafter complied with. Within the last two or three years four piggeries, with accommodation for 1,200 pigs, have been removed, the sites having been taken over for housing scheme purposes.

*Offensive Trades.*—The number of offensive trades remains as last year at 15. They are carried on in eleven separate establishments, and without serious infringement of the byc-laws.

*Common Lodging-houses.*—There are seven of these houses, with accommodation for 2,110 males and 54 females. They continue to be well kept, and only a few minor irregularities were discovered.

*Overcrowding.*—Night inspection of ticketed houses was continued, although it is recognised that meantime it has little or no effect so far as the overcrowded house which is occupied by members of one family is concerned. It does, however, control any tendency to overcrowding due to the keeping of lodgers.

A survey of 3,436 houses of one and two apartments which are regarded as uninhabitable was completed towards the end of the year,

and afforded opportunity of gauging the extent of overcrowding in small houses of a poor class. Any estimate of the prevalence of overcrowding depends on the standard adopted, and for purposes of comparison three different standards have, in the following table, been applied; as will be observed, each of them indicates a large number of overcrowded houses:—

TABLE SHOWING NUMBER OF HOUSES OVERCROWDED.

					One-Apartment Houses.	Two-Apartment Houses.
Number of Houses reported on ...	...	...	...	...	1,797	1,639
„ „ Occupants, ...	...	...	...	...	5,897	7,755
Number overcrowded—						
(1) on a Standard of Three Persons per Apartment,	{		717 or		363 or	
			40 per cent.		22 per cent.	
(2) on a Standard of Three Persons per Apartment	{		755 or		466 or	
+ Sex separation at 10 years of age,			42 per cent.		28 per cent.	
(3) on a Standard of Two Persons per Apartment	{		1,001 or		832 or	
+ Sex separation at 10 years of age,			55 per cent.		50 per cent.	

TABLE SHOWING NUMBER OF PERSONS OCCUPYING  
3,436 UNINHABITABLE HOUSES OF ONE AND TWO APARTMENTS.

Number of Persons per House.	Number of One-Apartment Houses.	Number of Two-Apartment Houses.	Total Number of Occupants.
1	317	72	389
2	426	233	1,318
3	337	249	1,753
4	282	249	2,124
5	198	263	2,305
6	133	210	2,053
7	57	161	1,526
8	28	97	1,000
9	12	68	720
10	7	28	350
11	—	5	55
12	—	3	36
13	—	1	13
Totals,	1,797	1,639	13,652

It is of interest to note that 317 (or 17 per cent.) of the one-apartment and 72 (or 4 per cent.) of the two-apartment houses are occupied by single persons, and that 426 (or 23 per cent.) of the one-apartments and 233 (or 14 per cent.) of the two-apartments are occupied by two persons.

*Closing Orders.*—Sixteen houses were represented for closing orders in terms of the 1925 Act, and 33 for demolition orders in terms of the 1930 Act. Included among these were 16 basement houses.

Difficulties arise occasionally in connection with the rehousing of tenants dispossessed by slum clearance operations or by closing orders, and in the case of an old and defective tenement in Garngad district which was represented under the 1925 Act the difficulties appeared at first to be almost insurmountable. The tenement con-



tained in all 30 single-apartment houses, the rents of which averaged about 2s. per week. Fourteen of them were occupied by old, single persons, nine by two persons, and seven by families in which there were children. Twenty-one of the tenants were in receipt of Parish relief, and could not afford to pay the rent of even the cheapest scheme house, and the problem therefore was how to find for them alternative accommodation suitable to their means. After negotiations carried out by the Housing Department with the factors of other tenements in the locality, and with assistance from the Parish Authorities in the way of increased allowances to some of the tenants, it was found possible to accommodate the twenty-three old persons and couples in houses vacated by a like number of families who were living under overcrowded conditions in single apartments, and who were transferred to new houses. Five of the families were rehoused at Germiston, and the other two tenants made their own arrangements and found accommodation elsewhere. In the end a two-fold advantage was secured without causing undue hardship to the tenants—most of whom, would, however, have preferred to remain where they were—i.e., the demolition of a grossly insanitary tenement and the rehousing of twenty-three overcrowded families.

*Slum Clearance.*—No slum clearance scheme was undertaken in this division during the year, but evidence was prepared and submitted with regard to 254 houses included in the Calton Improvement Scheme.

*Slum Clearance Rehousing Schemes.*—Five schemes, including in all 1,928 houses, were under supervision. The latest scheme at Saracen, consisting of 312 houses, was fully occupied by the end of the year. Particulars of the results of the visits made by the supervising inspectors are detailed elsewhere, and from these it will be seen that, on the whole, the houses are well kept by the majority of the tenants, but there is no doubt that in many cases a reasonable standard of cleanliness is only secured because of the constant supervision that is maintained.

At the request of the Housing Department, night inspections of houses suspected to be overcrowded were made, and the conditions found reported to that Department.

Considerable trouble arose in Saracen Scheme during the autumn months when the bug-infestation trouble became acute in some of the houses. In every case where the presence of bugs is suspected, assistance is given by our Department to enable tenants removing from slum houses to make a start in the new houses under bug-free conditions. But there are many difficulties in the way of ensuring that bugs or bug-eggs will not be transported with the furniture, and it was found that, in spite of the precautions taken, a considerable number of the houses were infested with vermin. For the purpose of lessening the risk of pollution and to make it easier for the tenants to deal with the trouble should it arise, the houses in Saracen have been provided with cement skirtings, while there are no wooden picture



rails as in the older type of house. Under these conditions, tenants who will take the necessary pains should be able to keep their houses free from vermin.

Most of the tenants concerned took the necessary action for the cleansing of the infested furniture, but, as in every scheme, there were a troublesome few, and with regard to these compulsory measures had ultimately to be taken. After advice and warnings, 27 statutory notices were issued in terms of the Glasgow (Police) Order Confirmation Act, 1904; 23 of these were complied with, but in the other four cases court proceedings had to be instituted before the necessary cleansing was effected.

*Intermediate Houses.*—Towards the end of the year, 1,125 houses of this type were in occupation at Possilpark, Ruchill, Balgraybank, Keppochhill, and Saracen. "Intermediate" houses are primarily intended for the re-housing of families with limited incomes who are living under overcrowded conditions, and in the following table the average number of persons per apartment in the new houses is compared with the average number in the houses formerly occupied by the families concerned. The improvement with regard to overcrowding is indicated, and most noticeably so in the case of the 119 single-apartment houses, in which the average of 6·1 persons per apartment in the old houses was reduced to 2·0 under the new conditions.

Old Conditions.			New Conditions.		
Number and Size of Houses formerly occupied by Rehoused Families.	Population.	Average Number of Persons per Apartment.	Number and Size of Houses in which these have been Rehoused.	Population.	Average Number of Persons per Apartment.
119 of One Apartment,	726	6·1	834 of Three Apartments,	4,711	1·9
833 of Two Apartments,	5,005	3·0	238 of Four Apartments,	1,729	1·8
106 of Three Apartments,	635	2·0			
14 of Four Apartments,	74	1·3			
Totals,					
1,072	6,440	3·0	1,072	6,440	1·9

*Other 53 families were in lodgings prior to being rehoused.*

Systematic visitation of Intermediate houses is not carried out, but opportunity was taken during the summer months to make an inspection of a number of them, and undernoted is a statement with regard to the condition in which they are kept.

Number of Houses Inspected.	Condition.		
	Clean.	Fair.	Dirty.
600	542	54	4

The tenants of these houses are, from our point of view, of a better type than those in slum clearance rehousing schemes, and the general standard of cleanliness is therefore much higher.

*Hamiltonhill Rehousing Scheme.*—Enquiry was made with reference to the occupancy of the houses in Hamiltonhill. This is the oldest of the slum clearance rehousing schemes, and the purpose of the enquiry was to ascertain the conditions with regard to overcrowding, &c., in a scheme that has been in occupation for several years. It includes 728 houses, 74 per cent. of which are of two apartments and 26 per cent. of three apartments, and it was found that, on a standard of three persons per apartment and sex separation at ten years of age, a considerable number of the houses were overcrowded. To accommodate the families on that standard, the following would be the theoretical number and size of houses required, viz., 15 per cent. of one apartment; 45 per cent. of two apartments; 34 per cent. of three apartments; and six per cent. of four apartments. The average number of persons occupying the two-apartment houses was 4·5, and in the case of the three-apartments 6·9. The enquiry also revealed that 37 per cent. of the original tenants had removed.

In 105 houses there were lodgers who were relatives of the tenants, and in 14 instances these lodgers were the cause of overcrowding. In 14 houses there were non-relative lodgers, but in no case were they the cause of overcrowding.

As a matter of interest, it may also be noted that 45 per cent. of the families derived their whole income from Parish relief, Unemployment Benefit, Pensions, &c.

*Tents, Vans, &c.*—The powers conferred by Section 33 of the Corporation Order Confirmation Act, 1929, enabled us to regulate more satisfactorily than was previously possible the conditions under which van-dwellers were living. In connection with a colony of vans, &c., in St. Rollox district, conditions which could not be controlled by the old bye-laws had existed for some years. Here the owner of a small plot of ground had gathered together an assortment of vans and similar structures—14 in all—including several huts and one erection which appeared to have been formerly a horse-drawn vehicle. These structures were meagrely furnished and let at charges ranging from 4s. 6d. to 10s. 6d. per week, to people who for one reason or another had removed from houses in various parts of the city. They possessed none of the conveniences of ordinary dwelling-houses, and the site was hopelessly overcrowded. Application, in terms of Section 33, for the consent of the Local Authority to use the ground for the accommodation of these vans, &c., was refused, but it was only after court proceedings that they were ultimately cleared away.

Other five applications for consent to use land for the accommodation of vans to be used for human habitation were received, and of these three were granted and two refused. These applications, however, covered only nine vans. By the end of the year the number of inhabited vans had been reduced from 27 to 4. Several sites were occupied from time to time, usually during the winter months, by travelling showmen, but they remained for short periods only, and application for consent was therefore unnecessary.

*Factory and Workshop Act.*

*Bakehouses.*—Regular inspections were made, and it was found necessary to issue 29 intimations to occupiers with regard to lack of cleanliness.

*Workshops and Workplaces.*—Twenty-five workshops were measured and registered, and at the end of the year the total number on the register was 500. For the most part these are small establishments with only one or two employees. 1,418 visits of inspection were made, and 56 irregularities dealt with.

*Homeworkers.*—Premises occupied by homeworkers were inspected and found in satisfactory condition.

*Dirty Houses and Bedding.*—In the course of ordinary house-to-house visitation, the female inspectors discovered 327 dirty houses and 71 houses in which the bedding was in an unsatisfactory condition. The householders concerned were in every case called upon to carry out the necessary cleansing, and this was subsequently done.

*Verminous Children.*—302 visits to schools were made for the purpose of examining children suspected to be verminous or dirty. In all, 4,176 children were examined, and of that number 106 were found to be infested with vermin, 1,325 were slightly verminous, and 339 were dirty but not verminous. Notices served or warnings given to the parents or guardians of these children had the required effect, and on subsequent visits to the schools the children were found clean. Visits to the homes of the children revealed that in 68 instances the house or the bedding was in an unsatisfactory condition. Representations by the inspectors secured the removal of the insanitary conditions.

*Brokers' Premises.*—Reports to the Licensing Court were made with reference to 25 premises regarding which applications for licence to carry on the business of broker had been received.

*General.*—Operations carried out in terms of the Rag Flock Act, the Rent Restriction Act, the Rats and Mice Act, &c., do not call for special comment.

J. H. PATTERSON,  
*Divisional Sanitary Inspector.*

10th March, 1931.

## EASTERN DIVISION.

*Nuisances.*—The nuisances removed or abated numbered 14,656, and all were dealt with without recourse to legal proceedings in court. As in former years, the greatest numbers were discovered in the more densely populated districts, and in nature consisted chiefly of choked drains and sanitary fittings. A type of nuisance difficult to overcome is that of littering courts with domestic refuse, which is either thrown from dwelling-house windows or deposited by young persons who, in order to shorten the journey to the ashbins, dispose of the refuse in this way. Where the practice is prevalent the tenants are warned of the possible attraction for vermin and flies which such refuse as fish offal or other edible matter has, and the likelihood of offenders being dealt with by the magistrate. As a rule warnings are effective for a time, and then the practice begins afresh. A complaint dealt with which has some analogy to the depositing of edible refuse on courts makes perfectly plain the outcome of such an undesirable habit. The complainer in this case had a restaurant in a tenement, and he alleged that his premises were rat infested. On making enquiries it was observed that edible refuse was being placed in the ashbins in the court, and that there was distinct evidence of a rat run from the ashbins into the complainer's premises. When the rat run was sealed and the refuse referred to was disposed of in some other way, the vermin were seen no more. There is reason to believe that many rat infestations of tenement property are due to the attractive nature of much of the refuse which is placed in ashbins, and which would be better burned.

Complaints of insect pests have been more numerous than formerly, and may be accounted for by the prominence given in the press lately to bug and beetle infestations. With regard to bug infestations, it has been necessary to ask factors in some cases to remove wood facings around recess beds in order to get at the insects, and to ask tenants to remove wallpaper for the same purpose. It cannot be too often repeated that to repaper dwelling-house walls which are infested without stripping them to the plaster is but to afford better facilities for nesting. The object to be aimed at is to have a smooth, unbroken wall surface on which the vermin cannot find a crevice likely to become a nesting place. When bugs are observed in a house, the officer draws the attention of the tenant to their presence and explains their habits and the methods by which they may be eradicated. Unfortunately, the tenants who have the closest association with bugs do not know them in the egg stage. It is only when the insects attain that mahogany hue peculiar to the species, and have reached maturity, that they are recognised, with the result that the infestation has secured a footing more difficult to get rid of. The driving of nails into walls for the hanging of pictures should be discouraged, as many old pictures purchased from brokers are infested, and some of the bugs eventually retire to the plaster broken by the nails to begin fresh areas of infestation.



A few complaints of beetle infestations have been made, and in such cases the factors or tenants have applied their own remedies, with varying degrees of success. To lay down insecticides on floors or to use traps are very doubtful remedies. There is no doubt that the various powders and pastes recommended for the destruction of beetles will kill, but the methods usually adopted in their application are faulty and suggest a case of "Come out, beetle, and be killed." A more effective way to accomplish complete destruction is to trace the source of infestation and there apply the insecticide. It has been found necessary in some instances to seal small openings in walls and woodwork to prevent the insects from travelling and thus confine them to a small area, when their elimination is more easily accomplished.

In the early spring, investigations were made in a few houses regarding the presence of the furniture mite (*Glycyphagus domesticus*). This mite is said to make its appearance frequently in houses after the arrival of new or newly upholstered furniture. It does not damage textile fabrics, and is said to be harmless to human beings, but its occurrence in numbers causes much annoyance. It breeds on all kinds of dry vegetable and animal matter, and is favoured by damp. It is sometimes associated with Algerian fibre used for the stuffing of chairs, &c. All the affected houses had back gardens, and the investigations were concentrated on these and the household furniture. None of the latter was said to be new or newly upholstered, and the owners would not consent to an examination of the fibre stuffing for fear of damage to the fabric. The suggestion was made that all decaying vegetable matter in the gardens be removed to a reasonable distance from the dwelling-house doors, which was done, and sulphur fumigations were carried out in the affected rooms in conjunction with a general cleansing. While the source of the mites was unfortunately not ascertained, they disappeared in a few months as the result probably of the repeated sulphur fumigations and general cleansing.

*Overcrowding and Housing.*—Overcrowding statistics have appeared in reports since the housing shortage first became acute, and as the subject is closely related with the provision of new houses it is necessary from time to time to review the situation in order to chart what effect the latter has had towards the relief of the former. During the year 1,291 houses were erected by the Corporation. These consisted of 194 four-apartments, 880 three-apartments, and 217 two-apartments, of which 233 three-apartments and 217 two-apartments were for the rehousing of displaced tenants in improvement schemes. The remainder were of the "Intermediate" type, and the first of their kind in the division. Against the number of new houses erected there falls to be debited the number of houses closed or demolished or converted to business premises, viz., 38 three-apartments, 311 two-apartments, and 380 one-apartments. Of the houses demolished 521 were in improvement schemes, 108 were at the instance of the Dean of Guild being considered dangerous buildings, 30 were converted



to business premises, and 70 were due to closing or demolition orders made in terms of the Housing (Scotland) Act, 1925—a total of 729 dwelling-houses demolished or closed. From the figures it will be seen that the number of houses provided exceeds those closed or demolished by 562. The movement of tenants in the older types of property was not considerable, and while there were more houses to let than in former years, these were chiefly of three apartments and upwards.

It would appear that the lack of modern conveniences, such as light bathrooms, electric lighting, and hot-water supply, and probably the high rentals asked for in certain cases were causes which might reasonably be assumed for a few of the houses being tenantless. Some of the late tenants of these houses were said to have purchased houses in one or other of the building schemes throughout the City and suburbs. Their removal to new houses suggests the desire for up-to-date and modern dwellings.

There are a few self-contained houses situated in districts which have for housing purposes depreciated by the tide of industrialism, and where no amount of renovation would be a profitable venture. Where these exist there is a tendency to let them to tenants who must, in order to pay the rents, sub-let many of the rooms. Such practices simply mean that so many more single-apartment houses have come into existence. Should the mode of occupancy in these sub-let rooms be such as to necessitate sanitary supervision, the houses may be declared farmed-out houses, but that procedure might be the means of furthering the depreciation of the district, and would certainly augment the already large number of single apartments.

The following table gives the situation of the "Intermediate" houses, the number and size of those occupied, and the number occupied by three or less persons per room. Three persons per room have been taken as the standard of accommodation, and any excess of that number is considered as overcrowding. There are also given the number and sizes of the houses vacated by the tenants now occupying the "Intermediate" houses, together with figures showing the extent to which relief has been given to overcrowding. The tenants of these new houses have been drawn from a wide area; consequently the reduction in the number of overcrowded houses is not appreciably noticed in any particular district. There is no doubt that the earnings of many householders, due to bad trade, preclude them from bettering their conditions.

Situation of Intermediate Housing scheme.	No. and size of houses occupied in Schemes.			No. and size of houses in schemes occupied by 3 persons and under per room.			No. and size of houses in schemes with more than 3 persons per room			No. and size of houses vacated by tenants now occupying houses in schemes.					No. of overcrowded houses reduced by re- housing tenants in schemes				
	Apartments.			Apartments.			Apartments.			Apartments.					Apartments.				
	3	4	Total.	3	4	Total.	3	4	Total.	1	2	3	4	Total.	1	2	3	4	Total
Allan Street,	70	18	88	70	18	88	—	—	—	13	69	6	—	88	13	19	—	—	32
Altyle Street,	142	12	154	142	12	154	—	—	—	28	114	11	1	154	28	32	—	—	60
Braidauld Street,	76	12	88	76	12	88	—	—	—	17	65	6	—	88	16	15	1	—	32
Haghill, ...	114	39	153	114	39	153	—	—	—	6	131	14	2	153	5	34	1	—	40
Totals, ...	402	81	483	402	81	483	—	—	—	64	379	37	3	483	62	100	2	—	164

Not one of the new houses is overcrowded on the standard of accommodation adopted in this report, and overcrowding in 164 houses has been relieved by the rehousing of 483 families, being equal to 34 per cent. of the families rehoused. The full complement of the houses in the respective schemes was not completed by the end of the year.

The rehousing of the tenants in the various approved slum-clearance schemes is well advanced. In that connection there remain about 50 of the families living in houses included in the Glasgow Improvement Scheme, 1928, to be rehoused, as well as those in the Calton Improvement Scheme, which latter scheme has only recently been approved. There are many old houses yet in the division which might be similarly dealt with. That a proportion of old houses qualify to be classified yearly as uninhabitable is the outcome of experience. The periodical surveys of property show that certain types of houses which a few years ago may have had only one objectionable feature now present all that is necessary to consider them as unfit for human habitation. That state is reached as the result of doing the minimum of repairs, and nothing accelerates more the degree of unfitness than neglect, particularly in cases where there is some structural defect to start with.

From the latest survey of old front and back lands, there are approximately 696 properties which in construction and situation are similar to those included in previous improvement schemes, and contain 4,357 houses, of which 2,082 are single apartments, 1,973 are of two apartments, 246 are of three apartments, and the remaining 46 are of four or more apartments. The back lands number 184 of the total (696). The number of persons accommodated in the 696 properties is 16,409, and on the basis of three persons per room as the standard of accommodation, 23·2 per cent. of the houses in front lands and 26·6 per cent. of the houses in back lands are overcrowded. As was to be expected, the greatest degree of overcrowding is in single apartments, and is as follows:—front lands, 31·5 per cent.; and back lands, 34·8 per cent. If the standard of accommodation in these houses were taken at three persons per room, plus sex separation at the age of ten years, instead of three persons per room, overcrowding would be proportionately increased.

There were represented for Closing Orders 59 houses which, in consequence of extensive disrepair and other objectionable features, such as deficiency of light and ventilation, were considered as uninhabitable. The majority of the families living in the houses to which the orders applied have been rehoused by the Corporation, and the remainder in due course will be similarly accommodated.

*Rent Restrictions Acts.*—Forty-six applications were made for certificates in terms of these Acts, and all were granted with one exception. The majority of the houses were beyond repair and had been represented for closing or demolition under the Housing Act.

*Repair of Houses.*—Notices numbering 221 were issued to owners or factors of houses which were not in a reasonable state of repair, and all were attended to. The chief defects were those of broken plaster, dampness in walls, and defective woodwork.

*Ticketed Houses.*—There are 3,755 ticketed houses—a decrease of 481 since last year. The decrease is accounted for by the demolition of such houses included in improvement schemes. From the inspections made for the discovery of overcrowding it was found that about 31 per cent. housed from one to 5½ adults in excess of the permissible number. In the more serious cases of overcrowding attempts were made to obtain better accommodation.

*Common Lodging Houses.*—No overcrowding was found in common lodging houses, of which there are six for males and five for females. All the houses seemed to be well conducted, and apart from a few necessary repairs called for, the keepers complied with the regulations. The majority have had their full complement of lodgers during the year.

*Farmed-out Houses.*—The 205 registered farmed-out houses were visited frequently during the year, and the bye-laws were enforced where necessary. No overcrowding was found, and where repairs were asked for these were promptly attended to. A property consisting of six houses was taken over as business premises, thus reducing the number of farmed-out houses to that extent.

*Tents and Vans used for Human Habitation.*—Vans and similar structures have been popular with many people, apart from showmen, for a good number of years in the east end of the city, and during that post-war period when the housing shortage was most acute their number was so considerably augmented that in the interests of public health the necessity for better legal power than that which existed became apparent in order to cope adequately with the situation. Many areas of spare ground, irrespective of position, were being used to accommodate van dwellings, and as most of these grounds had become congested it was concluded that the Corporation should obtain Parliamentary powers to approve of ground before being used for this purpose, and for the provision of a reasonable area on which each van dwelling should rest so as to overcome congestion. Parliamentary power was ultimately obtained and is included in the Glasgow Corporation Order Confirmation Act, 1929. According to the Act it is unlawful for any person to let, use, or permit to be used ground for the accommodation of vans, &c., used, or intended to be used for human habitation, without the consent of the Corporation, and on such conditions and for such a period as they think fit. Should that consent be withheld, the applicant has the right of appeal to the Sheriff. Power is also given by this Act to the Corporation to make bye-laws for the spacing of vans and similar structures used as dwellings, and for the lighting of the ground on which such structures

are accommodated. These bye-laws have been compiled and are awaiting confirmation. There are certain exemptions in the Act, the principal of which is that of the *bona fide* showman, who may occupy ground within the city for a period of six months in any twelve months without the consent of the Corporation. Showmen as a rule seldom remain for a longer period than six months. It is usually on the approach of winter that they draw towards the city, and had these types of habitations been confined to them the existing bye-laws made in terms of the Public Health (Scotland) Act would have been sufficient to promote reasonable sanitary conditions.

The new Act, which became operative early in the year, has in its application been the means of removing from the east end of the city long established centres for van dwellers, and has proved without doubt its effectiveness in achieving the objects for which it was intended. Prior to the Act coming into force there were accommodated on 17 separate sites 242 vans or similar structures, with a population of 783. By the end of the year five separate sites were occupied by 86 vans, with a population of 255. The reduction in numbers is accounted for by factors which are later referred to. Three of the five separate sites were approved by the Corporation for the accommodation of one van each, and the remaining two were not approved. One of the two applicants whose ground was not approved appealed to the Sheriff and was successful. The ground in question measures fully an acre and adjoins the old Vinegarhill showground, which for years was so popular with van dwellers and which is now being converted to a children's playground. As this applicant got consent from the Sheriff the use of the ground for van dwellers was unconditional and without a period of time. The other applicant who was refused consent by the Corporation to let his ground for the accommodation of van dwellers unsuccessfully appealed against that decision to the Sheriff-Substitute and then to the Sheriff-Principal. The vans are not yet cleared off this ground, but will be early in the year. The chief causes for the reduction in number of van habitations are due to (1) a number of people who, anticipating the Corporation's refusal for them to continue letting ground to van dwellers, gave up the practice without making application; and (2) a few who did make application, and on being refused the necessary consent, warned off their tenants. Two of the latter, however, continued to let their grounds to van dwellers other than showmen, and were prosecuted and fined £2 each, with the alternative of 20 days' imprisonment.

Of the total vans used for human habitation at the end of the year, 32 were owned and occupied by showmen and the number of persons housed therein was 96. The number of vans similarly used by other than showmen was 54, with a population of 159, and the majority of these were accommodated on the ground for which the Sheriff gave consent to occupy for this purpose. The figures for those other than showmen prior to the enforcement of the new Act were 228 vans, with a population of 750. There has been, therefore, a reduction of 174 vans amongst this class of van dwellers. An effort



was made to ascertain how many had given up vans as dwellings, but it was not successful. There is reason to believe that a fair number removed their vans outwith the city.

*Dirty Houses and Verminous and Dirty Children.*—As the result of house-to-house visitation 1,138 dirty houses and sets of dirty bedding were discovered and dealt with. There were submitted to the nurses for inspection at the various schools 14,068 children, of which 1,299 were verminous and 381 were dirty. The parents of these children, on being notified, carried out the necessary cleansing and thus removed further cause of complaint.

*Piggeries.*—There are eight piggeries, which were visited regularly. All were found clean, with one exception, in which case the owner had to be notified to improve the general cleanliness of his premises.

*Brokers' Premises.*—Twenty-two applications were received for brokers' licences and the premises after inspection were reported on. In one or two cases improved ventilation or repairs were asked for and were subsequently carried out satisfactorily.

*Workshops, Workplaces, and Schools.*—The number of workshops and workplaces registered is 500. They chiefly consist of small businesses with few employees. In four instances it was necessary to call for the repair or the provision of water-closet accommodation for the use of the employees, and in all cases where there were defects in structural or in sanitary fittings and the need for cleansing, the work was carried out. The sanitary condition of the schools was satisfactory.

*Bakehouses.*—The bakehouses number 129, of which 54 are factories. They were regularly inspected to enforce where necessary the provisions of the Factory and Workshop Act. Twenty-nine notices regarding the need for limewashing and cleansing and for the removal of nuisances were issued, all of which were attended to.

*Outworkers.*—In terms of the Factory and Workshop Act, 1901, occupiers of factories and workshops are required to submit to the Local Authority twice yearly lists of their outworkers, so that the homes of the latter may be inspected for cleanliness or the existence of infectious disease. Lists containing the names and addresses of 118 outworkers were received. The homes of these were visited and no cause for complaint was discovered. During the year there was added, by special order of the Secretary of State, the work of making lampshades to the existing classes of work which may be done by homeworkers.

*Offensive Trades.*—Complaints of smells were made in the early summer by a number of householders living in the vicinity of a tallow-melter's establishment, which, when investigated, were found to emanate from putrid mutton that had been purchased for the purpose



of manufacturing tallow. The mutton, which was part of a cargo that had gone bad on board a Glasgow-bound ship due to the breaking down of the refrigerating plant, was delivered at the works towards the end of the working day, and in view of its condition those in charge decided to have it boiled at once. The boiling, therefore, began during the evening and was continued throughout the night, with the result that a number of the complainers alleged that they had to leave their houses in order to escape the offensive effluvia. By the following day the nuisance caused by the effluvia had been removed, but it was learned that the firm in question intended to obtain a further supply. On being advised not to repeat the atmospheric pollution of the previous night, otherwise action would be taken for a breach of the bye-laws, the management decided not to purchase any more of the mutton. It was evident that the firm in question knew that by purchasing the putrid mutton for their business complaints of smells would be the outcome ; hence the haste in getting it disposed of during the night. In such surreptitious departures from what may otherwise be a well-conducted business, legal action in court might be taken, but that takes time, and as the object was in this case to prevent a continuation of the nuisance, the method adopted for that purpose was considered the best in the circumstances. Were there a different form of licensing such places, those in charge might have more consideration for those who live in the vicinity. For instance, had the statute dealing with offensive trades made it obligatory to apply for licences for such businesses annually, as it has done with knackers' yards, &c., then experiences of the kind referred to would provide sound objections to the renewal of the licences.

The number of offensive trades is 42, being one less than last year, and 69 contraventions of the bye-laws were discovered. These referred to defects in structure, apparatus, and the conduct of the businesses. The Local Authority refused the application of a tallow-melter to alter the construction of his premises.

*Dietetic Water Storage Cisterns.*—Notices numbering 430 were issued to owners, requiring them to cleanse or cover and ventilate cisterns used for the storage of water for dietetic purposes, and all were attended to. The inspection of such cisterns is a very necessary work in view of the number which are found with their protecting covers removed or improperly placed. The Water Engineer was communicated with regarding the large number of such fittings in the hope that they might be reduced, and he has promised to take observations of the water pressures in the various districts. Should the pressure of water in the main pipes be sufficient to supply the needs of the population, there may follow a reduction of storage cisterns.

*Limewashing.*—Four surveys were made of closes and staircases, and the factors or owners of 1,889 properties were notified to have the walls, &c., limewashed. All the notices have been given effect to, with the exception of a few issued towards the close of the year, and these

will be attended to. Most of the complaints received about dirty staircases refer to the repainting of the lower walls, which cannot be enforced by the statute.

*Cleansing of Closes, Stairs, &c.*—One thousand five hundred and ninety-three cards fixing the rotation for the sweeping and washing of closes and stairs used in common were served on tenants, and 4,254 tenants were warned to take their regular turns of this duty. One tenant was prosecuted and fined for failing to wash a stair.

*Extermination of Rats.*—Prior to “Rat Week,” which began on the 31st March, literature relating to the destruction of rats and rat-proofing of buildings was, as in former years, issued to owners and occupiers of premises which were likely to be infested. From enquiries it was learned that about 1,110 rats were destroyed as the result of the operations during this particular week. There is no doubt that the number is under-estimated, as in many instances poison bait which had been set for rats was subsequently removed, and it is reasonable to assume that the bait so removed accounted for the destruction of a few more. Complaints of rat-infested business premises are not numerous; tenants of dwelling-houses complain more readily, and in these circumstances when the factors are notified remedial measures are taken. The people who most require prompting to exterminate rats are those engaged in businesses where stocks of goods cannot be injured by the vermin. In such cases it is usually alleged that there is nothing in their premises for vermin to eat, and by that reasoning there should in consequence be no vermin. The fact is overlooked that rats are attracted to places not only where food and water may be had, but to where cover is afforded against attack and where nesting is most secure. Stableyards and other places which were likely to attract vermin were visited frequently in order to maintain the enthusiasm manifested during Rat Week, and in quite a few cases the inspectors gave their advice on questions relating to the subject.

*Drainage.*—The smoke-test was applied on 670 occasions to the drains and plumber work of old and new properties for the discovery of defects. In 147 cases the drains or plumber work or both were found defective. All notices issued calling for alterations or repairs were duly attended to, and in that connection 18 modern washdown water-closets were substituted for a similar number of an obsolete pattern.

*Rag Flock Act.*—All the samples of rag flock, numbering seven, which were taken and submitted to the Public Analyst, conformed to the standard of purity.

*Burial Grounds.*—All the burial grounds were well kept, and no infringements of the bye-laws were discovered.

# SANITARY CONVENIENCES USED IN COMMON BY TENANTS OF DWELLING-HOUSES.

Nature of Convenience.	Number of Tenants served.					Totals.
	1	2	3	4	5 or more.	
Water-closets, ... ..	—	1,355	6,383	2,007	356	10,101
Sinks and water supplies outwith dwelling-houses, ... ..	222	98	21	—	—	341
Dry closets, ... ..	5	1	—	—	—	6
Privy middens, ... ..	—	—	—	—	—	—
Ashpits, ... ..	—	1	1	1	186	189

A. STIRLING,  
Divisional Sanitary Inspector.

24th March, 1931.

## SOUTH-EASTERN DIVISION.

The general sanitary condition of this area throughout the year has been good. As usual, of course, a considerable number of nuisances have been dealt with, these totalling 9,143 as compared with 9,427 in the previous year. Details of these will be found in the appendix tables.

*Jenny's Burn.*—The condition of this burn has again been under consideration, but there still appears to be considerable difficulty in the way of having the Jessie Street and Calder Street sewers diverted, and these are still discharging crude sewage into the burn. A further source of serious pollution of a temporary nature occurred towards the latter part of the year when, owing to the subsidence of a sewer in Aikenhead Road, due to mineral workings, the sewage from the King's Park area had to be diverted into the burn until the sewer was reconstructed.

*John's Burn.*—Measures for the cleansing and purification of this burn had again to be undertaken owing to its offensive state and the smells arising therefrom. The bed of the burn was found to be covered with a fungus growth which the City Analyst reported to consist of *Sphaerotilus Natans*. He recommended that the burn should be treated with copper sulphate, and this was subsequently carried out, the treatment being applied on two separate occasions at about a fortnight's interval. This treatment proved successful, and the bed of the burn was then thoroughly cleaned out to give it a free flow.

*Privies.*—There are 49 pan privies serving the tenants of dwelling-houses; 20 at business premises; and one at a farm. Of the 49 connected with dwelling-houses, 31 serve one tenant, 10 serve two tenants, three serve three tenants, one serves four tenants, and four serve five or more tenants. In addition to these, there are 10 privy middens serving the tenants of dwelling-houses; one at business

premises ; and seven at farms. Of those at dwelling-houses, one serves one tenant, four serve three tenants, two serve four tenants, and three serve five tenants.

*Ashpits.*—There are still 168 ashpits in use, six of which serve two tenants, two serve three tenants, seven serve four tenants, and 153 serve five or more tenants.

*Water-closets.*—There are 5,867 used in common by two or more tenants, and of these 1,031 serve two tenants, 3,166 serve three tenants, 1,304 serve four tenants, and 366 serve five or more tenants.

*Sinks.*—There are 123 one-apartment and 80 two-apartment houses without sink accommodation inside.

*Baths.*—Approximately 21,741 houses are provided with baths.

Many of the houses served by privies and privy middens and by common ashpits, and without inside sink accommodation, have been scheduled for action under the Housing Acts, and the remainder are in outlying areas where no sewer accommodation is available.

*Water-closets for Shops.*—At 21 shops where inadequate water-closet accommodation was found to exist for the persons employed, water-closets were provided.

Complaint of sewage contamination of a water course, the water from which was used for drinking purposes by cows grazing in the field adjoining, was investigated and traced to a septic tank taking the drainage of a house some distance away. The tank was found to be out of working order and in need of cleaning, and practically crude sewage was escaping from it into the ditch. Measures were at once taken to have it put in proper working order, and a new source of water supply was provided for the cows.

*Overcrowding.*—To gauge the extent to which overcrowding still exists, enquiries were made at 6,536 houses, 2,476 of these being of one apartment, 3,441 of two apartments, 484 of three apartments, and 135 of four apartments. From the following table, it will be observed that there is still a considerable amount of overcrowding :—

Wards.	Total No. of Houses.	One Apartment.		Two Apartments.		Three Apartments.		Four Apartments.	
		No. of Houses.	Overcrowded on basis of persons per room.	No. of Houses.	Overcrowded on basis of persons per room.	No. of Houses.	Overcrowded on basis of persons per room.	No. of Houses.	Overcrowded on basis of persons per room.
27, ...	3,048	1,102	2 420	1,503	2 276	320	2 89	123	2 23
26, ...	2,358	919	551 348	1,318	611 230	119	29 5	2	— —
34, ...	591	249	157 115	295	176 62	38	7 —	9	— —
35, ...	539	206	132 85	325	159 54	7	1 —	1	— —
	6,536	2,476	1,460 968	3,441	1,650 622	484	116 15	135	23 3
			59% 40%		48% 18%		24.5% 3%		17% 2.2%



*Ticketed Houses.*—There are 363 ticketed houses in Ward 26 and 1,350 in Ward 27, and of these 146 were found to be overcrowded.

*Farmed-out Houses.*—There are now only 44 farmed-out houses on the register, 38 having been removed during the year. Adequate furniture and furnishings as required by the bye-laws were not provided or maintained in these houses, although the keeper was notified of the contravention, and a case was submitted to the Procurator Fiscal. Proceedings in court were not taken, however, as the keeper's agent gave the Fiscal an undertaking that the bye-laws would be complied with. This was not done, and the matter was again reported to the Procurator-Fiscal, but proceedings were still pending at the end of the year.

*Common Lodging Houses.*—Twenty-two day visits and four night visits were paid to the common lodging houses, of which there are two, and 25 minor contraventions of the bye-laws were discovered. These were remedied on the attention of the keepers being drawn to them.

*Limewashings.*—Three thousand four hundred and sixty-three visits of inspection were made to properties in connection with limewashing of the walls of closes, staircases, &c., and notices were issued with reference to 872 properties where the walls were found to be in a dirty condition. The necessary cleansing was carried out in every case.

*Cleansing of Closes, Stairs, &c.*—A considerable amount of work was entailed in enforcing the bye-laws regulating the cleansing of closes, stairs, &c., 5,647 visits being made in connection with this matter. Three thousand six hundred and one tenants were warned, but this did not in all cases prove effective, and rotation cards and notices to the number of 1,101 had to be served. In nine cases proceedings had to be taken in court to enforce compliance with the bye-laws. In one case an admonition was given, while in the other eight fines ranging from 5s. to 21s. were imposed.

*Water Storage Cisterns.*—Water storage cisterns are, unfortunately, still necessary at many properties, and of these the usual inspections were made, when 410 were found to be in a dirty condition, or improperly covered, or inadequately ventilated. The owners were at once notified and the necessary cleansing and repair operations were subsequently carried out.

*Piggeries.*—The two piggeries still on the register are situated in outlying areas, and to these 17 visits of inspection were paid. On one occasion one of the owners had to be warned with reference to want of cleanliness, but otherwise there was no occasion for complaint.

*Workshops and Workplaces.*—The workshops and workplaces numbering 495 were regularly inspected, 2,063 visits being paid. Forty premises were found to be in a dirty condition, but in only



one case was it necessary to resort to court proceedings to enforce the necessary cleansing. Other defects relating to ineffective ventilation and disrepair of sanitary conveniences to the number of 12 were also remedied.

*Bakehouses.*—There are 43 factory bakehouses and 64 other bakehouses on the register. Five hundred and twenty-nine visits of inspection were made to these premises, 14 of which were found to be in a dirty condition, while 14 other nuisances were also dealt with.

*Outworkers.*—One hundred and forty visits were paid to the homes of outworkers, of which there are 111 on the register. These were all found clean.

*Drainage.*—Five thousand nine hundred and seventy-nine visits were made in connection with the inspection and testing of drainage and plumbing systems, and the smoke test was applied on 2,538 occasions. Of these, 144 were applied to the drainage systems of old properties, 131 of which were found to be defective. At a new cricket pavilion in Richmond Park, fitted with a water-closet and urinal, a septic tank was provided to deal with the drainage, there being no sewer in the immediate vicinity. The drainage of the new pathological section and two new operating theatres at the Royal Samaritan Hospital, in which four water-closets, 21 sinks and basins, and two spray fittings were provided, was also tested. New latrines installed for boys and girls at Pollok Academy were smoke-tested and found in good order, there being in all 16 new water-closets and two urinals. The drainage system of the new bakery erected by the United Co-operative Bakery Society was also tested and found smoke-tight; in this 23 water-closets, 43 sinks and basins, one urinal, and 10 spray baths have been provided.

*Rat Infestation.*—In connection with the “Rat Week” campaign, 449 leaflets explaining methods of destroying rats and making buildings rat-proof were distributed, and it was learned that as a result of the action taken during the week 378 rats were killed. A very much larger number must have been exterminated, however, as large quantities of poisoned baits which had been put down disappeared, but no dead rats resulting therefrom were actually found. While a special effort for the extermination of rats is made during “Rat Week,” action is also continuous throughout the whole year. Thirty properties, the rat infestation of which had come to the knowledge of the department, were dealt with, many rats being exterminated and all rat runs closed up.

*Fly Nuisance.*—All stable dung-pits were again cleaned out regularly during the summer months and sprayed, and in one stable-yard where the fly nuisance was very bad, the dung-pit was demolished and a new one erected on another site.

## HOUSING.

*The Glasgow Calton Improvement Scheme, 1929.*—No houses in this division were included in the scheme, but the preparation and submission of evidence with reference to 232 houses in the Eastern Division were undertaken.

*Repair of Houses.*—In addition to 1,592 visits made in connection with the slum clearance scheme, 1,136 visits and revisits were paid to other houses to ascertain their condition. One thousand four hundred and sixty defects, such as dampness of walls, defective roofs, defective flooring, broken plaster, &c., were found, and the necessary repairs were carried out on the owners being notified.

*Closing Orders.*—The houses at 5 Coustonhill Street and 1 Green Lane, Pollokshaws, on which Closing Orders had been made in 1929, were closed, and the latter house demolished this year, the delay being due to the difficulty of finding suitable accommodation for the tenants.

*Rent Restrictions Act.*—Only three applications for certificates that houses were not in a reasonable state of repair were received during the year, and these were all granted

*Rehousing Schemes.*—The total number of houses in these schemes is 600, there being 132 at Polmadie, 180 at M'Neil Street, and 288 at Govanhill. Of the three schemes, Polmadie still shows least improvement. Of the 90 houses in the scheme which were clean at the beginning of the year, one tenant was evicted for non-payment of rent and seven removed out of the scheme. Of the remainder, 15 went down to the "fair" category, while 67 remained clean at the end of the year. Of the 42 tenants in the "fair" category at the beginning of the year, six removed out of the scheme, one fell to the "dirty" category 25 remained "fair," and 10 went up to the "clean" category. Of the 14 new tenants who came into the scheme during the year, 11 are "clean" while three are only "fair." The final classification at the end of the year is thus 88 "clean," 43 "fair," and one "dirty."

Referring to this scheme, the nurse-inspector reports that she has still considerable difficulty in stirring up the tenants to take an interest in their houses and surroundings.

At the McNeil Street Scheme, of the 164 houses which were "clean" at the beginning of the year, the tenants of three were evicted for non-payment of rent, while nine others removed out of the scheme. Of those remaining, two went down to the "fair" category, leaving 150 "clean" at the end of the year. Of the 16 houses in the "fair" category at the beginning of the year, one removed out of the scheme, one fell to the "dirty" category, but eight improved so much that they were raised to the "clean" category, so that only six remained in the "fair" category at the end of the year. The 13 new tenants who came into the scheme during the year are in the "clean" category, so that the final classification for the year is 171 "clean," 8 "fair," and one "dirty,"

The nurse inspector, reporting on this scheme, says that on the whole there is a good class of tenant, and the majority of them still continue to take a pride in their houses. There has also been a decided improvement in the less satisfactory houses.

In the Govanhill Scheme, of the 263 houses which were "clean" at the beginning of the year, 15 of the tenants were ejected for non-payment of rent, and 16 removed. Of those remaining, four went down to the "fair" category, leaving 228 still "clean." Of the 25 houses classed as "fair" at the beginning of the year, the tenants of five were evicted for non-payment of rent, and one tenant removed. Of the remainder, 14 improved so much as to justify their being raised to the "clean" category, thus leaving only five in the "fair" category. Of the new tenants coming into the scheme during the year, 33 are in the "clean" category, and one is in the "fair" category. Three houses remained unoccupied at the end of the year. The final classification for all the occupied houses was 275 "clean" and 10 "fair."

With reference to this scheme the lady inspector reports as follows:—

"This scheme has now been in existence for three years, and as a whole I consider the tenants appreciate and endeavour to live up to the better conditions in which they now live. Complaints continue of such matters as dislike of district, expense of heating, cooking, and travelling, but in a lesser degree than formerly. There still prevails the tendency to use the one apartment in which there is a fire, especially during cold weather. In most cases this state of affairs ceases when better earnings are obtained, and it is possible to provide more and better clothing, food, and fuel. Despite unemployment and continued depression in industry, there is a marked advance in appreciation of cleanliness and a greater endeavour to create that environment which is essential to good citizenship."

DUNCAN THOMSON,

Public Health Department,  
Glasgow, 22nd April, 1931.

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## SOUTH-WESTERN DIVISION.

### HOUSING.

*Overcrowding—Additional powers under Housing (Scotland) Act, 1930.*—Overcrowding continues to claim much attention, and, notwithstanding the virtual suspension, during recent years, of legal repressive efforts to combat the evil, each succeeding year now shows a slight improvement on its predecessor. An added interest now attaches to its study from the sanitary inspector's point of view in respect of certain new powers under the Housing (Scotland) Act, 1930.

*Improvement Area.*—Where a locality, large or small, consists of houses which, because of bad environmental conditions and other

defects which render them insanitary and which, in addition, are overcrowded, has been declared an improvement area within the meaning of the Act, the local authority must deal not only with the defective housing, but also take steps for the prevention and abatement of overcrowding and the securing and maintenance of a decent standard of housing conditions, and for this latter purpose may frame and enforce new bye-laws specially applicable to each improvement area.

*Overcrowding Standards.*—Under the Housing Act of 1925 such bye-laws must be based on a cubic space standard. In view, however, of the recent draft model byelaws prepared by the Ministry of Health setting up a floor area and sex separation standard for improvement areas in England and of the possibility of a change-over nearer home to a standard based on a given number of persons (irrespective of age) as the co-efficient of occupancy, and the room (of varying size) as the unit of accommodation with, in addition, a minimum floor space per person and sex separation, an attempt is made herein to show the difference between the existing cubic space standard which has been accepted as mainly a physiological one, and the persons-per-room, &c., standard, which conveniently, though not quite accurately, may be described as a decency and comfort standard.

*Conditions disclosed in 1926 and 1929 Surveys.*—Before considering the question of standards for overcrowding it will be convenient to recall that 2,110 houses of one, two and three apartments were surveyed in 1926 and again in 1929, and that among other facts, the following were revealed, viz.:—houses with more than one family declined from 12 per cent. in 1926 to 7 per cent. in 1929; houses overcrowded on standards of two and of three persons per room remained practically unchanged, the proportion of houses of one, two and three apartments on the two-persons per room standard overcrowded in 1926 being 78 per cent., 58 per cent. and 40 per cent. respectively, as compared with 78 per cent., 54 per cent. and 39 per cent. in 1929, while on the three-persons per room standard, the respective proportions of overcrowded houses were 53 per cent., 24 per cent., and 8 per cent. in 1926, as against 50 per cent., 24 per cent. and 8 per cent. in 1929, that grossly overcrowded houses of one-apartment (with from 5 to 11 inmates) fell from 32 per cent. in 1926 to 29 per cent. in 1929, and that similar houses of two apartments (with from 8 to 14 inmates) showed a decrease from 18 per cent. in 1926 to 14 per cent. in 1929.

*Bases of Comparison.*—In the comparison which follows the cubic space (existing) standard is that of 400 cubic feet for a person of 10 years or over (an adult) and 200 cubic feet for a person under 10 years (a child), and the potential standard that of 2 persons per room (with the additional safeguard of a minimum floor space of 40 square feet per person) and sex separation at 10 years.

*Houses in One Street taken as Means of Comparison.*—The following observations have this quality, that they appertain to the houses



forming an actual street possessing the attributes precedent to the making of an improvement area and are concerned with overcrowding and other features of housing conditions which obtain in small houses occupied for the most part by general labourers and other lowly-paid workers.

*Number of Tenements, Houses, &c.*—The street consists of 12 tenements of 4 and 5 square storeys of dwelling-houses (and a few (6) shops), with 4 to 6 houses on each flat, and an average of 23 houses in a tenement, the houses totalling 272, viz.:—116 of one, 153 of two, and 3 of three apartments. (Beyond recording the number of three-apartment houses and stating that one of them is a house let-in-lodgings (the only one in the street) no further reference is made to them, the observations which follow, therefore, applying to the one- and two-apartment houses.)

*Ticketing.*—All the one-apartment houses and 108 of those of two apartments are ticketed.

*Facts disclosed by survey of Street.*—The total available accommodation is more than that required by the existing standard and much less than the potential standard requirements, as is shown in the following table in which are also set out the numbers of houses (a) overcrowded, (b) with their complement and (c) with less than their complement, and the actual and maximum possible population based on each standard, together with the average cubic and floor space per person and house. Reference to the table shows that the rooms of the ticketed houses are very small—in fact, these are only large enough practically for a bedstead and a chair. The ticketed houses are not made-down; they are true to their type and period, but not representative of the room of the ordinary room-and-kitchen house, in which the floor area of both apartments is about the same, with the balance slightly in favour of the kitchen.

One of the aims of an improvement scheme is the transference of the big families in overcrowded houses to houses more in keeping with their needs, and the substitution to the houses thereby vacated of families with few members, which, in their new occupancies, but old houses, would live nevertheless under good housing conditions. Consequently details of the duration of occupancy and the sizes of the families are shown in tabular form. The sizes of families most commonly met with in one-apartment houses are those with from one to five members, these accounting for 85 per cent., and in two-apartment houses families with from two to seven members compose 80 per cent. of the total.

The records show that one-half of the one-apartment houses and one-third of the two-apartment houses have changed hands at least once during the past five years, that of the tenants with occupancies of not more than one year's duration, 61 per cent. of those now occupying one-apartment houses came from lodgings, and 58 per cent. of those now in two-apartment houses came from houses (of their own) of one apartment.



					One Apartment.		Two Apartments.	
<i>Houses.</i>								
Total	...	...	...	...	116		153	
Overcrowded	} on (a) c.c. and (b) p.p.				(a) 26%	(b) 67%	(a) 28%	(b) 67%
With their complement					(a) 11%	(b) 23%	(a) 6%	(b) 11%
With less than their complement					(a) 63%	(b) 10%	(a) 66%	(b) 22%
<i>Population.</i>								
Actual,	...	...	...	...	297 ad. + 107 ch.		579 ad. + 181 ch.	
Maximum possible on c.c.,	...	...	...	...	404 persons		760 persons	
Maximum possible on p.p.	...	...	...	...	416 adults		849 adults	
Average inmates per house,	...	...	...	...	232 persons		417 persons	
	...	...	...	...	3.5 persons		5.0 persons	
<i>Cubic Capacity.</i>								
Average per house,	...	...	...	...	1,424 cu. ft.		2,220 cu. ft.	
Average per person,	...	...	...	...	287 cu. ft.		447 cu. ft.	
<i>Superficial Area.</i>								
Average floor area per house,	...	...	...	...	160 sq. ft.		229 sq. ft.    276 sq. ft.	
"    "    kitchen,	...	...	...	...	160 sq. ft.		165 sq. ft.    154 sq. ft.	
"    "    room,	...	...	...	...	—		64 sq. ft.    123 sq. ft.	
"    "    person,	...	...	...	...	46 sq. ft.		49 sq. ft.	

"c.c." means existing, and "p.p." potential, standard.

TABLE SHOWING DURATION OF OCCUPATION OF TENANTS.

Size of House	Periods of Occupancy.						Shortest.	Longest.	Average.
	0-5 years.	5-10 years.	10-15 years.	15-20 years.	20-25 years.	25-40 years.			
One apt. (116),	53%	20%	10%	14%	3%	—	1 month	25	6.3
Two apts. (153),	34%	10%	14%	33%	6%	3%	"	40	10

TABLE SHOWING SIZE DISTRIBUTION OF FAMILIES.

Size of House.	Number of Persons in Family.									
	1	2	3	4	5	6	7	8	9-12	
One apt. (116)	...	10%	22%	25%	19%	9%	6%	5%	3%	1%
Two apts. (153),	...	4%	14%	11%	16%	14%	12%	13%	8%	8%

*On Standards.*—Standards as a means to affect the abatement of overcrowding within the family met with a measure of success when houses were plentiful; now this machinery has broken down. To set up a new, and possibly more stringent standard will result in a statistical change, but under existing conditions will effect no amelioration in overcrowding as it is known now. The enforcement of a new standard in an improvement area (where a standard—ticketing—is, as a rule, already in existence, but inoperative) is, to say the least, problematical. As bearing on this, it may be mentioned that the draft model bye-laws prepared by the Ministry of Health for preventing and abating overcrowding in improvement areas in England (where a standard of 40 sq. ft. for adults and 30 sq. ft. for children, combined with sex separation at 14 years, has been specified) contain the following proviso, viz.:—that a person shall not be convicted of an offence (as regards overcrowding and failure to secure the prescribed sex separation) if the Court is satisfied that having regard to the size of his family he has not sufficient accommodation to comply

with the bye-laws and that he has been unable to obtain sufficient accommodation, either because accommodation is not available or because of poverty.

A standard will operate where new houses and selected families are concerned, but even here, the standard, in many cases, ultimately will be observed only in the breach. The remedy does not seem to lie in the making and enforcing of new standards, but in the continuance of the provision of new houses, by which an easing of the housing situation is becoming definitely perceptible.

*New Houses.*—31 self-contained and semi-detached houses were erected in Cardonald, Crookston, and Pollokshields districts, a decrease of about 75 per cent. compared with last year.

*Repair of Houses.*—2,917 visits were made under the Housing Acts and one notice thereunder was issued regarding the want of repair. In addition, 2,464 intimations were given under the Public Health Act relating to disrepair and dampness in houses. All were duly attended to.

*Slum Clearance.*—The remaining houses (51) under the 1926 and 1927 Schemes were closed, and are now (March, 1931) demolished.

*Improvement Scheme.*—The houses (114) in the Whitefield Scheme maintain their high standard of cleanliness, 111 being recorded as clean and three as fair.

*Houses closed voluntarily.*—24 houses (in various parts of the division) unfit for human habitation, on becoming vacant, were not re-let on their condition being formally brought under the owners' notice, and were closed permanently without recourse being had to Closing Orders.

*Making-down of Houses.*—A number of houses because of their large size and/or lack of up-to-date conveniences or other circumstances, are empty, and are likely to remain so unless they are sub-divided. This, of course, cannot be done without the sanction of the Dean of Guild Court, and in order to strengthen these powers the framing of bye-laws under the Housing Act of 1925 for the better control of subdivision of houses and the provision of amenities therein is engaging the active attention of the Local Authority.

*Rent (Restrictions) Acts.*—Two applications for certificates were made and both were granted.

*Bogus Interviewing.*—Instances occurred of men, falsely representing themselves as being in the employment of the Corporation, interviewing and offering, for a consideration, priority of occupation of new houses to tenants of houses which they had concluded were in slum clearance schemes. The matter was of course referred to the police, who reported that on the last day of the year a man had been sentenced

in the Sheriff Court to six months' imprisonment for having committed a series of thefts from houses to which he was admitted by pretending to be acting under the authority of one of the Corporation departments.

*Nuisances.*—Inspections numbering 165,686 were made with respect to the discovery of and removal of nuisances, of which 16,350 were registered and 16,865 abated. None calls for comment and all were attended to without the necessity for recourse to court proceedings. They are detailed in the appendix.

Observations were continued at the commercial undertaking and the public utility works referred to in last year's report as being the causes of atmospheric pollution. At the former an improvement falls to be recorded, and it is hoped that further experiments now being carried out will solve the difficulty. The ground for complaint at the latter still exists, and although experiments have been made, these have been ineffective. A break-down of part of the plant is said to have hindered operations. An assurance has been given that new experiments about to be made will remove the causes for complaint.

*House Drainage.*—House drainage, on the whole, continues satisfactory. The bye-laws, however, should be recast in the light of the latest approved practice and a new code, preferably on a national scale, adopted.

*Sanitary Accommodation.*—Steady progress has been maintained with respect to the conversion of conveniences on the conservancy system to water carriage and to the introduction of water and sinks into such houses as are still without these necessities. Operations during the year have been pretty much the same as in those immediately preceding, so, by way of change, instead of submitting one year's figures it is thought that a retrospect over a longer period will convey a better idea of how matters move in this connection, and five years, instead of one, have been taken for comparison.

*Privies, Earth Closets and Privy-Middens.*—At the end of 1925 the number of privies was 44, and in May, 1926, when the Boundaries Act, 1925, came into operation areas fell to be added to Fairfield and Pollokshields Wards, and this number was increased by 26, giving a total of 70. At the end of 1930, the number had fallen to 42, and of these 16 are in factories, in the majority of which sewerage facilities are not available, 16 are at farms, and 10 at other isolated houses, also without sewerage facilities. 20 serve one, 4 serve two, and one serves each three and four families respectively. There are no earth closets. The privy-middens in 1925 numbered 3, and to these 10 were added in 1926 by reason of the enlarged boundaries, giving a total of 13, which has since been reduced to 7, all at isolated premises remote from sewers, and of which 4 serve one family, 2 each serve two families and one serves four families.

*Conversion of Privies to Water-Closets.*—Water-closets to the number of 36 have been substituted for privies and privy-middens. Lack of sewerage facilities accounts in great part for the non-conversion of the remaining conveniences to the water carriage system. Every opportunity is taken of effecting the very desirable improvement which the introduction of modern sanitary conveniences confers.

*Water-Closets used in Common.*—The number of water-closets used in common remains practically the same, the slight diminution being due almost entirely to slum clearance. The number of common water-closets common to two or more tenants in 1925 was 4,537, which, with an increase of 23 in 1926, gives a total of 4,560, the numbers serving 2, 3, 4 and 5 or more tenants being 1,089, 1,884, 1,187 and 400 respectively, as compared with 1,008, 1,884, 1,166 and 353 respectively at the end of 1930. The elimination of the common water-closet will necessarily be a slow process, particularly during the housing shortage and all that it connotes.

*Ashpits used in Common.*—A reduction of 24 in the number of ashpits falls to be recorded, there being 1,477 in 1925, with the addition of 25 in 1926, a total of 1,502, of which 1,481 served 5 or more households. The number at the end of 1930 was 1,478. These are situated principally in Kinning Park, Govan, and Fairfield Wards, and statutory powers have been obtained for the substitution of ashbins in these wards. The bin system, as it obtains in the congested and less favoured localities, fails to provide a sanitary and sightly method of storage of household refuse, due to the system as operated, the aggregation of bins and the careless habits of the tenants.

*Houses without Water and Sinks inside.*—Houses without a water supply and sink inside numbered 42 in 1925, which was increased in 1926 by 16, making a total of 58. Since then 27 of the houses have been demolished, and, consequent on action under the Police Act, 22 have had water and sinks introduced, leaving a total of 9 in 1930, as compared with 58 five years ago. Of the houses (9) still without water inside, 8 are supplied with gravitation water from "Kennedy" wells adjacent to the houses (6 are unfit for human habitation and are earmarked for demolition, and in the case of 2 proceedings are stayed pending possible action under the Housing (Rural Workers) Act), while the remaining one, which is remote from gravitation supplies, has close to it a shallow well of good potable water, properly protected against pollution.

*Summary.*—In the five years ended 31st December, 1930, the number of privies has fallen from 70 to 42, a reduction of 54 per cent., privy-middens from 13 to 7, a reduction of 46 per cent., water-closets and ashpits used in common have remained practically stationary, and houses without water from 58 to 9, a reduction of 84 per cent. Thirty-six water-closets have been substituted for privies and privy-



middens and water and sinks have been introduced into 22 houses. All the tenement property is provided with water-closet accommodation.

*Offensive Trades.*—Premises were regularly visited and, on the whole, found satisfactory. In one of them several warnings were given regarding what amounted to general untidiness: the old plant which in part contributed to this state of affairs is to be scrapped and modern machinery installed next year. No new businesses were established.

*Schools, Factories and Workshops.*—The schools are satisfactory. Such factories as are visited and workshops call for no comment other than that intimations were given in a few instances regarding the need for limewashing and the existence of sanitary defects of a minor character.

*Common Lodging-Houses and Farmed-out Houses.*—These number four and 12 respectively, the same as last year, and do not call for comment.

*Ticketed Houses.*—There are on the register 1,325 ticketed houses, as compared with 1,381 last year, the decrease (56) being accounted for by slum clearance. The overcrowded houses are also slightly reduced in number, there being 147 (11·0 per cent.) as against 161 (11·5 per cent.) in 1929. The worst case in each of four wards is shown below and occurred in each instance in one-apartment houses.

Ward.	Inmates.	Average air-space per person.	Average floor space per person.	Duration of Occupancy.	Remarks.
		cu. ft.	sq. ft.	yrs.	
28	F., M., three sons, 14, 9 and 4; four daughters, 25, 19, 17, and 10, ...	9 144	17	15	Removed to two-apartment house, March, 1931.
29	F., M., four sons, 18, 6, 4 and 2; four daughters 16, 14, 11 and 9, ...	10 150	16	19	Resident since marriage. Removed to two-apartment house, February, 1931.
30	F., M., four sons, 21, 14, 9 and 7; three daughters, 12, 8 and 8 months, ...	9 144	16	21	Resident since marriage. Trying to get another house; income 47/- a week.
32	F., M., three sons, 8, 6 and 2 months; four daughters, 12, 11, 4 and 2, ...	9 122	13	12	Resident since marriage. House closed (Demolition Order) and family re-housed in Corporation house, March, 1931.

*Removals.*—Forty-seven families removed from their overcrowded houses during the year, and while it was not possible to obtain records



of all the new addresses, of those of whom such information is available all went to larger houses; none of them was found to have again rented a ticketed house.

*New Cases of Overcrowding.*—The new cases of overcrowding numbered thirty-three and ranged from one adult to four adults and one child in excess. All, however, do not arise through new tenants having removed into ticketed houses; 12 are due to natural increases in families long resident in ticketed houses and to the increasing ages of the inmates bordering on ten years, the demarcation line separating the category “child” from that of “adult.”

Of the new cases (33) recorded, 22 were in one apartment and 11 in two-apartment houses. In every case the overcrowding was caused by members of one family, that is to say, there were no lodgers, nor was there any sub-letting—none of the “worst cases” already commented upon is a new case. In 12 instances (9 one-apartment and 3 two-apartment houses) the householders have been resident in their present houses since marriage, and the overcrowding is accounted for by the natural increases of the families. Of the other new cases (13) in one apartment houses, 4 came from lodgings (one outwith the city), 6 from houses from which they had been ejected, and 3 from houses (one outwith the city) voluntarily vacated; and of the two-apartment cases (8), 2 were from lodgings, 4 from private houses voluntarily vacated and 2 (of whom one left voluntarily and the other was ejected) from Local Authority Houses (one outwith the city).

*Natural Increase of Families in certain New Cases.*—Where the duration of the occupancy coincides with the married life of the parents, of those which were resident in one-apartment houses (9), in one instance the family is increased by 2 persons, in each of three families by 3 persons, in two families by 4 persons, and in three families by 5 persons; and in the two-apartment houses (3), the increases are 4, 5, and 7 persons respectively in each family.

*Air Space in New Cases.*—The total cubic capacity of the one apartment houses is sufficient air Space, as required by the bye-laws, for 60 adults and 28 children, a total of, say, 88 persons. The number actually accommodated is 136 persons, an excess of 55 per cent. The air Space contained in the two-apartment houses is that equivalent for 43 adults and 17 children, say, 60 persons, whereas the actual number is 85, an excess of 41 per cent.

*Rat Destruction.*—Ordinary everyday work in connection with rat extermination receives a fillip from Rat Week, which serves the very useful purpose of specially directing attention to, and causing concerted action against the rodents. In the course of ridding a picture house which had been invaded by rats one was trapped in the sound box of a “talkie.” During the month of August an instance of extensive rat infestation in a butcher’s shop received the attention of the officers. The brick walls of the back saloon of the premises were wood lined and

the vermin had found a ready breeding harbour behind this lining as well as under the wooden floor of the saloon. The walls were stripped and plastered and a concrete floor laid down and the premises otherwise rendered rat-proof. When the operations were proceeding no fewer than 189 rats were accounted for.

*Burial Grounds.*—The three cemeteries have been regularly and frequently inspected ; no contraventions of the bye-laws were discovered.

*General.*—Details of the other operations will be found in the appended table.

JAMES REID,  
*Divisional Sanitary Inspector.*

16th March, 1931.

## APPENDIX.

TABLE I.—GLASGOW, 1930.—ESTIMATED POPULATION IN EACH MUNICIPAL WARD, ACREAGE, AND PERSONS PER ACRE.

MUNICIPAL WARDS.	POPULATION.				Acreage.	Persons per acre (including Institutions and Shipping.)
	Without Institutions and Shipping.	Institutions.	Shipping.	Total.		
1. Shettleston and Tollcross, ...	38,863	100	—	38,963	1,022	38
2. Parkhead, ...	37,128	1,307	—	38,435	883	43
3. Dalmarnock, ...	36,725	27	—	36,752	288	128
4. Calton, ...	32,132	1,839	—	33,971	333	102
5. Mile-end, ...	21,869	42	—	21,911	191	115
6. Whitevale, ...	22,063	475	—	22,538	176	128
7. Dennistoun, ...	22,548	332	—	22,880	280	82
8. Provan, ...	40,617	803	—	41,420	1,284	32
9. Cowlairs, ...	22,403	1,538	—	23,941	456	52
10. Springburn, ...	22,438	2,945	—	25,383	2,261	11
11. Townhead, ...	25,018	1,657	—	26,675	175	152
12. Exchange, ...	14,112	2,545	—	16,657	289	58
13. Blythswood, ...	11,192	2,494	75	13,761	242	57
14. Anderston, ...	24,757	1,047	1,851	27,655	422	66
15. Sandyford, ...	19,436	452	—	19,888	152	131
16. Park, ...	19,561	235	—	19,796	272	73
17. Cowcaddens, ...	34,914	780	9	35,703	488	73
18. Woodside, ...	32,960	1,025	—	33,985	170	200
19. Ruchill, ...	35,565	1,117	2	36,684	1,766	21
20. North Kelvin, ...	21,744	19	—	21,763	146	149
21. Maryhill, ...	25,335	1,187	—	26,522	1,391	19
22. Kelvinside, ...	22,529	899	—	23,428	1,127	21
23. Partick (East), ...	27,748	1,095	—	28,843	268	108
24. „ (West), ...	24,980	100	152	25,232	357	71
25. Whiteinch, ...	57,360	864	12	58,236	2,696	22
26. Hutchesontown, ...	38,982	29	—	39,011	389	100
27. Gorbals, ...	44,643	741	—	45,384	252	180
28. Kingston, ...	29,377	201	172	29,750	285	104
29. Kinning Park, ...	34,994	515	491	36,000	379	95
30. Govan, ...	35,618	328	13	35,959	529	68
31. Fairfield, ...	30,890	1,941	14	32,845	1,402	23
32. Pollokshields, ...	27,654	1,880	—	29,534	4,678	6
33. Camphill, ...	19,784	76	—	19,860	366	54
34. Pollokshaws, ...	21,383	—	—	21,383	1,847	12
35. Govanhill, ...	32,564	202	—	32,766	365	90
36. Langside, ...	17,352	794	—	18,146	557	32
37. Cathcart, ...	27,150	—	—	27,150	1,327	20
CITY, ...	1,054,388	31,631	2,791	1,088,810	29,511	37

TABLE II.—GLASGOW, 1930.—INHABITED AND UNOCCUPIED HOUSES  
IN EACH MUNICIPAL WARD.

MUNICIPAL WARDS.	INHABITED HOUSES.*				Empty Houses.
	1930.	1929.	Decrease.	Increase.	
1. Shettleston and Tollcross,	8,730	8,389	—	341	36
2. Parkhead, ... ..	8,785	8,707	—	78	14
3. Dalmarnock, ... ..	8,699	8,859	160	—	36
4. Calton, ... ..	8,026	8,134	108	—	95
5. Mile-end, ... ..	5,235	5,504	269	—	32
6. Whitevale, ... ..	5,395	5,454	59	—	56
7. Dennistoun, ... ..	6,128	5,852	—	276	49
8. Provan, ... ..	9,709	8,846	—	863	39
9. Cowlairs, ... ..	5,615	5,629	14	—	20
10. Springburn, ... ..	5,235	4,931	—	304	43
11. Townhead, ... ..	6,176	6,313	137	—	151
12. Exchange, ... ..	3,616	3,679	63	—	74
13. Blythswood, ... ..	2,614	2,775	161	—	89
14. Anderston, ... ..	6,000	6,183	183	—	90
15. Sandyford, ... ..	4,659	4,766	107	—	135
16. Park, ... ..	4,971	5,105	134	—	185
17. Cowcaddens, ... ..	8,575	8,702	127	—	95
18. Woodside, ... ..	8,248	8,401	153	—	85
19. Ruchill, ... ..	8,662	7,712	—	950	55
20. North Kelvin, ... ..	5,679	5,711	32	—	56
21. Maryhill, ... ..	5,925	5,595	—	330	22
22. Kelvinside, ... ..	6,118	5,891	—	227	109
23. Partick (East), ... ..	6,846	6,889	43	—	54
24. „ (West), ... ..	6,492	6,501	9	—	24
25. Whiteinch, ... ..	13,710	11,255	—	2,455	60
26. Hutchesontown, ... ..	9,627	9,631	4	—	10
27. Gorbals, ... ..	10,381	10,562	181	—	142
28. Kingston, ... ..	6,838	6,944	106	—	60
29. Kinning Park, ... ..	8,449	8,503	54	—	70
30. Govan, ... ..	7,991	7,967	—	24	33
31. Fairfield, ... ..	7,347	7,346	—	1	14
32. Pollokshields, ... ..	7,337	7,305	—	32	87
33. Camphill, ... ..	5,711	5,712	1	—	30
34. Pollokshaws, ... ..	5,513	5,494	—	19	24
35. Govanhill, ... ..	8,340	8,334	—	6	19
36. Langside, ... ..	4,843	4,848	5	—	23
37. Cathcart, ... ..	7,176	6,165	—	1,011	63
CITY, ... ..	259,401	254,594	—	4,807	2,279

\*Includes Inhabitant Occupiers.

TABLE III.—GLASGOW.—LININGS GRANTED BY DEAN OF GUILD COURT  
IN YEARS FROM 1918 TO 1930 IN RESPECT OF HOUSES.

Year ending 31st August.	NUMBER OF APARTMENTS.						TOTAL.
	1.	2.	3.	4.	5.	6.	
1918, ...	—	64	28	—	—	—	92
1919, ...	—	—	144	78	—	—	222
1920, ...	—	12	1,239	414	214	57	1,936
1921, ...	—	—	1,176	981	240	34	2,431
1922, ...	—	—	65	99	39	31	234
1923, ...	—	680	286	205	104	46	1,321
1924, ...	—	357	991	605	745	82	2,780
1925, ...	—	504	674	111	44	61	1,394
1926, ...	—	318	4,649	967	769	93	6,796
1927, ...	—	228	2,889	1,209	802	55	5,183
1928, ...	—	132	4,184	2,238	314	17	6,885
1929, ...	—	570	1,656	1,024	124	82	3,456
1930, ...	—	506	1,958	1,295	230	202	4,191

TABLE IV.—ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT  
SPRINGBURN PUBLIC PARK.

MONTHS.  1930.	TEMPERATURE.			RAINFALL.		SUNSHINE.
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature.	No. of Days.	Amount Collected in inches.	Hours.
January, ...	52	24	38	26	4.92	16.8
February, ...	49	20	34	8	0.28	38.2
March, ...	55	21	39	18	2.47	73.2
April, ...	64	30	46	16	1.39	124.6
May, ...	72	32	55	14	1.83	162.7
June, ...	78	43	57	17	3.21	194.7
July, ...	75	44	58	21	3.55	104.3
August, ...	79	46	58	28	6.52	107.3
September, ...	70	39	54	15	4.06	67.5
October, ...	62	32	48	27	5.82	75.5
November, ...	53	24	40	20	4.98	51.2
December, ...	51	25	44	24	3.91	6.3
1920, ...	75	26	48.1	230	43.88	1,030
1921, ...	82	22	48.5	249	43.23	1,228
1922, ...	79	31	46.8	228	32.87	1,089
1923, ...	83	20	46.4	260	44.64	1,036
1924, ...	74	18	46.1	256	39.72	973
1925, ...	83	18	46.7	222	38.24	1,224
1926, ...	86	22	47.7	242	45.91	1,174
1927, ...	77	20	46.8	245	49.12	1,162
1928, ...	79	20	46.8	255	49.35	1,121
1929, ...	80	14	46.3	226	43.01	1,223
1930, ...	79	20	47.7	234	42.94	1,022

The records for years previous to 1921 were taken at Glasgow Observatory.



TABLE V.—GLASGOW.—BIRTHS AND BIRTH-RATES *per Million* IN EACH WARD,  
FOR THE YEAR 1930, AND NUMBER AND PERCENTAGE OF ILLEGITIMATE BIRTHS.

MUNICIPAL WARDS.	Births. 1930.	Birth-rate 1930.	Birth-rate 1929.	Illegitimate Births.	
				No.	% Total Births.
1. Shettleston and Tollcross, ...	859	22,103	21,774	44	5.1
2. Parkhead, ... ..	932	25,102	25,482	65	7.0
3. Dalmarnock, ... ..	1,037	28,237	28,244	65	6.3
4. Calton, ... ..	918	28,570	27,595	90	9.8
5. Mile-end, ... ..	631	28,854	30,805	42	6.6
6. Whitevale, ... ..	523	23,705	24,319	33	6.3
7. Dennistoun, ... ..	385	17,075	14,804	19	4.9
8. Provan, ... ..	1,058	26,048	24,597	34	3.2
9. Cowlairs, ... ..	524	23,390	19,567	23	4.4
10. Springburn, ... ..	509	22,685	22,976	23	4.5
11. Townhead, ... ..	530	21,185	21,405	55	10.4
12. Exchange, ... ..	380	26,927	25,823	51	13.4
13. Blythswood, ... ..	233	20,818	20,228	27	11.7
14. Anderston, ... ..	622	25,124	24,608	55	8.8
15. Sandyford, ... ..	420	21,609	20,131	33	7.9
16. Park, ... ..	185	9,458	10,109	32	17.3
17. Cowcaddens, ... ..	973	27,868	29,318	86	8.8
18. Woodside, ... ..	841	25,516	23,668	58	6.9
19. Ruchill, ... ..	918	25,812	24,413	41	4.5
20. North Kelvin, ... ..	420	19,316	16,735	26	6.2
21. Maryhill, ... ..	587	23,170	21,279	21	3.6
22. Kelvinside, ... ..	184	8,167	6,600	5	2.7
23. Partick (East), ... ..	528	19,028	18,337	31	5.9
24. „ (West), ... ..	523	20,937	18,864	24	4.6
25. Whiteinch, ... ..	1,037	18,079	17,560	35	3.4
26. Hutchesontown, ... ..	1,057	27,115	26,915	41	3.9
27. Gorbals, ... ..	1,191	26,678	25,912	116	9.7
28. Kingston, ... ..	796	27,096	25,879	65	8.2
29. Kinning Park, ... ..	895	25,576	24,930	64	7.1
30. Govan, ... ..	993	27,879	26,463	73	7.4
31. Fairfield, ... ..	645	20,881	19,437	23	3.6
32. Pollokshields, ... ..	289	10,451	12,398	12	4.2
33. Camphill, ... ..	202	10,210	10,509	9	4.5
34. Pollokshaws, ... ..	341	15,947	14,083	20	5.9
35. Govanhill, ... ..	594	18,241	18,720	30	5.0
36. Langside, ... ..	163	9,394	10,842	6	3.7
37. Cathcart, ... ..	302	11,123	11,313	11	3.6
Institutions, &c. ... ..	97	—	—	35	—
CITY, ... ..	23,322	21,420	20,932	1,523	6.5

TABLE VI.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* IN EACH MUNICIPAL WARD, FOR THE YEAR 1930, AND CORRESPONDING RATES FOR 1929 AND 1928.

MUNICIPAL WARDS.	Deaths. 1930.	Death Rates.		
		1930.	1929.	1928.
1. Shettleston and Tollcross, ...	479	12,325	12,791	12,030
2. Parkhead, ... ..	487	13,117	15,886	13,837
3. Dalnarnock, ... ..	547	14,894	16,942	16,303
4. Calton, ... ..	619	19,264	24,190	20,996
5. Mile-end, ... ..	368	16,827	17,578	19,074
6. Whitevale, ... ..	362	16,408	16,535	15,760
7. Dennistoun, ... ..	298	13,216	13,437	13,371
8. Provan, ... ..	483	11,892	13,889	13,932
9. Cowlairs, ... ..	265	11,828	14,326	10,846
10. Springburn, ... ..	264	11,766	14,250	11,170
11. Townhead, ... ..	382	15,269	16,840	15,354
12. Exchange, ... ..	267	18,920	21,587	18,887
13. Blythswood, ... ..	196	17,513	20,888	17,020
14. Anderston, ... ..	388	15,672	16,791	14,653
15. Sandyford, ... ..	307	15,795	17,862	15,853
16. Park, ... ..	290	14,825	17,288	13,827
17. Cowcaddens, ... ..	595	17,042	19,379	16,650
18. Woodside, ... ..	522	15,837	17,677	17,016
19. Ruchill, ... ..	462	12,990	15,738	13,055
20. North Kelvin, ... ..	291	13,383	14,446	11,041
21. Maryhill, ... ..	314	12,394	13,407	12,116
22. Kelvinside, ... ..	275	12,206	14,964	11,096
23. Partick (East), ... ..	412	14,848	18,056	14,912
24. „ (West), ... ..	269	10,769	15,099	11,432
25. Whiteinch, ... ..	576	10,042	10,873	10,520
26. Hutchesontown, ... ..	561	14,391	16,601	14,046
27. Gorbals, ... ..	774	17,338	19,715	17,676
28. Kingston, ... ..	496	16,884	19,138	16,882
29. Kinning Park, ... ..	515	14,717	18,606	15,285
30. Govan, ... ..	590	16,565	16,905	15,750
31. Fairfield, ... ..	377	12,205	12,481	11,843
32. Pollokshields, ... ..	339	12,259	13,360	11,623
33. Camphill, ... ..	271	13,698	14,772	12,036
34. Pollokshaws, ... ..	251	11,738	12,703	11,256
35. Govanhill, ... ..	379	11,639	13,475	11,251
36. Langside, ... ..	196	11,296	12,254	11,238
37. Cathcart, ... ..	269	9,908	10,893	10,353
Institutions, ... ..	682	—	—	—
Harbour, ... ..	26	—	—	—
*Inward Transfers, ... ..	11	—	—	—
CITY, ... ..	15,455	14,194	16,306	14,410

\* Inward Transfer Deaths, where information is available, are allocated against appropriate wards.



TABLE VIII.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* FROM DIFFERENT CAUSES, FOR THE YEAR 1930, AND CORRESPONDING RATES FOR 1929 AND 1928.

CAUSE OF DEATH.	DEATHS.	ANNUAL DEATH RATE PER MILLION.		
	1930.	1930.	1929.	1928.
1. Enteric Fever, ... ..	10	9	6	9
31A. Typhus Fever, ... ..	1	1	—	—
2. Smallpox, ... ..	—	—	—	—
3. Measles, ... ..	266	244	73	345
4. Scarlet Fever, ... ..	41	38	37	31
5. Whooping-cough, ... ..	225	207	232	350
6. Diphtheria, ... ..	145	133	124	128
7. Influenza, ... ..	160	147	806	193
8. Encephalitis Lethargica, ... ..	27	25	27	33
9. Meningococcal Meningitis, ... ..	93	85	140	62
31B. Erysipelas, ... ..	63	58	48	35
10. Tuberculosis of Respiratory System, ... ..	876	805	941	876
11A. Tuberculous Meningitis, ... ..	198	182	140	148
11B. Abdominal Tuberculosis, ... ..	55	51	64	59
11C. Other Tuberculous Diseases, ... ..	113	104	99	110
12. Cancer (Malignant Disease), ... ..	1,437	1,320	1,356	1,312
13. Rheumatic Fever, ... ..	62	57	62	50
14. Diabetes, ... ..	136	125	125	95
15. Cerebral Hæmorrhage, etc. ... ..	998	917	988	866
31C. Meningitis (not Tuberculous) ... ..	60	55	50	61
31D. Other Nervous Diseases, ... ..	505	464	536	534
16. Heart Disease, ... ..	2,162	1,985	2,193	1,827
17. Arterio-sclerosis, ... ..	368	338	354	356
31E. Other Circulatory Diseases, ... ..	89	82	84	82
18. Bronchitis, ... ..	627	576	891	583
19. Pneumonia (all forms), ... ..	1,774	1,628	2,248	1,653
20. Other Respiratory Diseases, ... ..	225	207	221	163
21. Ulcer of Stomach or Duodenum, ... ..	108	99	123	113
22. Diarrhœa, etc. (under 2 years), ... ..	291	267	262	307
23. Appendicitis, ... ..	107	98	95	70
24. Cirrhosis of Liver, ... ..	36	33	40	33
25. Acute and Chronic Nephritis, ... ..	445	409	411	406
26. Puerperal Sepsis, ... ..	86	79	79	82
27. Other Diseases and Accidents of Pregnancy and Parturition, ... ..	115	106	87	98
28. Congenital Debility and Malformation, Premature Birth, ... ..	805	739	770	801
29 and 30. } Suicide, and other Deaths from Violence, ... ..	722	663	618	608
31. Other defined Diseases, ... ..	1,773	1,627	1,755	1,697
32. Causes ill-defined or unknown, ... ..	251	231	221	234
ALL CAUSES, ... ..	15,455	14,194	16,306	14,410



TABLE IX.—GLASGOW, 1930.—DEATHS FROM

CAUSE OF DEATH.	MALES.													Not Stated.	Total Males
	- 1	- 2	- 5	-10	-15	-20	-25	-35	-45	-55	- 65	- 75	75+		
1. Enteric Fever, ...	—	—	—	2	1	—	—	—	—	2	—	—	—	—	—
31A. Typhus Fever, ...	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—
2. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Measles, ...	52	60	19	1	1	—	—	—	—	—	—	—	—	—	13
4. Scarlet Fever, ...	4	3	7	2	1	—	—	—	1	—	—	—	—	—	1
5. Whooping-cough, ...	48	34	17	—	—	—	—	—	—	—	—	—	—	—	9
6. Diphtheria, ...	5	14	25	19	6	—	1	—	—	2	1	—	—	—	7
7. Influenza, ...	6	2	—	1	1	1	1	5	8	10	21	14	11	—	8
8. Encephalitis Lethargica, ...	—	—	1	—	—	2	3	—	4	2	1	—	—	—	1
9. Meningococcal Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
31B. Erysipelas, ...	26	4	8	6	3	3	2	1	1	1	—	—	—	—	5
10. Tuberculosis of Respiratory System, ...	3	—	—	—	—	1	1	1	2	8	7	2	5	—	3
11A. Tuberculous Meningitis, ...	1	4	12	6	9	36	62	85	98	93	55	20	2	—	48
11B. Abdominal Tuberculosis, ...	13	17	24	15	6	10	1	2	1	—	1	—	—	—	9
11C. Other Tuberculous Diseases, ...	1	1	4	5	3	5	1	1	2	1	1	1	—	—	2
12. Cancer (Malignant Disease), ...	9	4	7	5	6	6	7	9	2	5	5	2	—	—	6
13. Rheumatic Fever, ...	—	—	3	—	—	2	1	4	45	111	224	217	64	—	67
14. Diabetes, ...	—	—	—	2	3	8	4	1	1	3	1	—	1	—	2
15. Cerebral Hæmorrhage, etc., ...	—	—	—	—	—	—	1	2	3	5	12	15	5	—	4
31C. Meningitis (not Tuberculous), ...	—	1	—	—	1	2	—	2	11	42	130	179	99	—	467
31D. Other Nervous Diseases, ...	14	2	3	2	1	—	3	2	1	2	3	—	1	—	34
16. Heart Disease, ...	50	9	8	4	1	5	6	20	31	43	46	50	21	—	294
17. Arterio-sclerosis, ...	2	1	3	3	4	15	9	25	67	115	263	358	180	—	1,045
31E. Other Circulatory Diseases, ...	—	—	—	—	—	—	—	1	1	14	47	81	66	—	210
18. Bronchitis, ...	—	1	—	—	—	1	—	4	3	13	14	13	5	—	54
19. Pneumonia (all forms), ...	50	5	—	—	1	1	4	5	18	30	46	90	65	—	315
20. Other Respiratory Diseases, ...	325	144	54	16	4	17	18	56	88	94	120	102	39	—	1,077
21. Ulcer of Stomach or Duodenum, ...	18	6	5	6	2	—	3	5	10	17	22	23	15	—	132
22. Diarrhoea, etc. (under 2 years), ...	—	—	—	—	—	—	2	7	15	25	18	7	3	—	77
23. Appendicitis, ...	142	22	—	—	—	—	—	—	—	—	—	—	—	—	164
24. Cirrhosis of Liver, ...	—	1	1	7	6	4	6	4	5	8	11	2	—	—	55
25. Acute and Chronic Nephritis, ...	—	—	—	—	—	1	—	—	1	4	9	4	4	—	23
26. Puerperal Sepsis, ...	—	—	2	2	2	2	2	14	25	46	50	64	26	—	235
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28. Congenital Debility and Malformation, Premature Birth, ...	440	2	—	3	—	—	—	—	—	—	—	—	—	—	445
29. Suicide, and other and Deaths from Violence, ...	14	16	15	47	19	17	31	54	63	83	65	55	33	1	513
30. Other Defined Diseases, ...	108	15	11	17	15	10	8	26	46	73	131	196	219	—	875
32. Causes Ill-Defined or Unknown, ...	6	5	1	2	—	2	1	6	13	33	43	22	4	—	138
ALL CAUSES, ...	1,337	373	230	173	96	151	178	342	567	885	1,347	1,517	868	1	8,065



## DIFFERENT CAUSES IN SEXES AND AT SEVERAL AGE-PERIODS.

CAUSE OF DEATH.	FEMALES.														Total Females.	Total Both Sexes.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+			
1. Enteric Fever, ...	—	—	1	—	1	1	—	1	1	—	—	—	—	5	10	
31A. Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
2. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3. Measles, ...	54	56	20	2	—	1	—	—	—	—	—	—	—	133	266	
4. Scarlet Fever, ...	2	5	9	4	1	—	—	—	2	—	—	—	—	23	41	
5. Whooping-cough, ...	51	48	25	1	—	—	—	—	1	—	—	—	—	126	225	
6. Diphtheria, ...	7	9	27	21	5	2	—	—	1	—	—	—	—	72	145	
7. Influenza, ...	4	—	1	—	1	2	—	4	4	8	16	23	16	79	160	
8. Encephalitis Lethargica, ...	—	—	—	—	—	2	1	2	3	2	4	—	—	14	27	
9. Meningococcal Meningitis, ...	10	10	12	2	2	—	—	—	1	1	—	—	—	38	93	
31B. Erysipelas, ...	3	1	—	—	1	2	—	5	—	6	6	6	3	33	63	
10. Tuberculosis of Respiratory System, ...	2	2	1	8	19	79	50	87	59	42	30	12	2	393	876	
11A. Tuberculous Meningitis, ...	13	16	29	28	9	4	3	1	3	1	1	—	—	108	198	
11B. Abdominal Tuberculosis, ...	1	—	9	4	1	3	3	3	3	—	—	2	—	29	55	
11C. Other Tuberculous Diseases, ...	3	3	3	7	3	7	1	6	1	3	5	1	3	46	113	
12. Cancer (Malignant Disease), ...	1	—	1	1	1	1	—	22	61	152	216	203	107	766	1,437	
13. Rheumatic Fever, ...	—	—	2	3	5	4	1	9	5	2	3	3	1	38	62	
14. Diabetes, ...	—	—	—	—	3	3	1	5	10	8	31	27	5	93	136	
15. Cerebral Hæmorrhage, etc., ...	2	—	—	—	—	1	—	2	15	52	104	182	173	531	998	
31C. Meningitis (not Tuberculous), ...	7	4	1	3	2	—	—	2	3	2	2	—	—	26	60	
31D. Other Nervous Diseases, ...	29	4	6	6	9	11	7	13	18	35	32	22	19	211	505	
16. Heart Disease, ...	1	3	2	2	11	15	12	48	78	105	229	337	274	1,117	2,162	
17. Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	1	8	17	62	70	158	368	
31E. Other Circulatory Diseases, ...	1	1	—	—	—	—	—	4	1	3	9	11	5	35	89	
18. Bronchitis, ...	39	6	2	2	—	1	2	1	4	24	45	90	96	312	627	
19. Pneumonia(all forms)	240	94	35	16	5	6	15	28	30	45	58	67	58	697	1,774	
20. Other Respiratory Diseases, ...	9	3	3	—	—	2	1	3	7	10	10	19	26	93	225	
21. Ulcer of Stomach or Duodenum, ...	—	—	—	—	—	—	—	3	4	6	9	4	5	31	108	
22. Diarrhoea, etc. (under 2 years), ...	103	24	—	—	—	—	—	—	—	—	—	—	—	127	291	
23. Appendicitis, ...	—	—	3	5	3	4	3	13	7	5	4	3	2	52	107	
24. Cirrhosis of Liver, ...	—	—	—	—	1	—	1	—	1	1	5	2	2	13	36	
25. Acute and Chronic Nephritis, ...	—	2	—	3	2	1	1	13	28	40	51	46	23	216	445	
26. Puerperal Sepsis, ...	—	—	—	—	—	2	18	37	28	1	—	—	—	86	86	
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	4	17	57	36	1	—	—	—	115	115	
28. Congenital Debility and Malformation, Premature Birth, ...	356	2	2	—	—	—	—	—	—	—	—	—	—	360	805	
29. { Suicide, and other Deaths from	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
30. { Violence, ...	9	10	14	15	7	8	10	13	18	25	31	27	22	209	722	
31. Other Defined Diseases, ...	63	14	19	14	13	5	12	30	51	68	108	187	314	898	1,773	
32. Causes Ill-Defined or Unknown, ...	8	3	2	2	1	—	—	6	8	25	29	19	10	113	251	
ALL CAUSES, ...	1,018	320	229	149	106	171	159	418	493	681	1,055	1,355	1,236	7,390	15,455	

TABLE X.—GLASGOW, 1930.—DEATHS OCCURRING IN INSTITUTIONS FOR THE TREATMENT OF THE SICK, NURSING HOMES, &amp;c., WITHIN THE CITY.

CAUSE OF DEATH.	Corporation General Hospitals & Poorhouses.	Voluntary Hospitals and Infirmaries.	Corporation Fever Hospitals & Sanatoria.	Nursing Homes, Asylums, &c.	TOTALS.	% of all Deaths.*	Outward Transfer Deaths.
1. Enteric Fever, ... ..	1	—	7	—	8	80.0	2
31A. Typhus Fever, ... ..	—	—	1	—	1	100.0	—
2. Smallpox, ... ..	—	—	—	—	—	—	—
3. Measles, ... ..	16	1	161	—	178	66.9	6
4. Scarlet Fever, ... ..	—	—	38	—	38	92.7	8
5. Whooping-cough, ... ..	3	—	116	1	120	53.3	1
6. Diphtheria, ... ..	3	3	126	—	132	91.0	6
7. Influenza, ... ..	10	4	3	4	21	13.2	2
8. Encephalitis Lethargica, ...	9	1	1	2	13	56.5	3
9. Meningococcal Meningitis, ...	—	11	66	1	78	83.9	11
31B. Erysipelas, ... ..	4	—	46	1	51	82.3	7
10. Tuberculosis of Respiratory System, ... ..	180	17	248	9	454	55.0	36
11A. Tuberculous Meningitis, ...	28	42	83	2	155	80.3	12
11B. Abdominal Tuberculosis, ...	7	12	9	1	29	60.4	5
11C. Other Tuberculous Diseases, ...	17	29	32	3	81	75.7	23
12. Cancer (Malignant Disease), ...	244	258	9	46	557	40.0	280
13. Rheumatic Fever, ... ..	7	21	3	2	33	54.1	10
14. Diabetes, ... ..	20	32	1	3	56	41.8	24
15. Cerebral Hæmorrhage, etc. ...	284	70	1	16	371	38.2	61
31C. Meningitis (not Tuberculous),	13	14	8	1	36	61.0	10
31D. Other Nervous Diseases, ...	139	71	8	23	241	56.6	60
16. Heart Disease, ... ..	610	166	17	30	823	39.9	90
17. Arterio-sclerosis, ... ..	56	20	—	12	88	25.7	21
31E. Other Circulatory Diseases, ...	13	22	2	1	38	42.7	16
18. Bronchitis, ... ..	128	21	7	9	165	26.7	14
19. Pneumonia (all forms), ...	308	140	571	23	1,042	59.8	70
20. Other Respiratory Diseases, ...	43	29	14	4	90	42.3	16
21. Ulcer of Stomach or Duodenum,	7	67	1	8	83	81.4	59
22. Diarrhœa, etc. (under 2 years),	90	53	22	1	166	57.4	8
23. Appendicitis, ... ..	6	80	—	13	99	93.4	90
24. Cirrhosis of Liver, ... ..	10	5	1	—	16	47.1	5
25. Acute and Chronic Nephritis,	84	100	12	12	208	47.8	59
26. Puerperal Sepsis, ... ..	7	19	57	1	84	97.7	10
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	18	64	3	4	89	79.5	21
28. Congenital Debility and Malfor- mation, Premature Birth, ...	110	171	10	7	298	37.2	44
29. } Suicide, and other Deaths from 30. } Violence, ... ..	36	324	1	3	364	56.4	146
31. Other Defined Diseases, ...	323	433	47	72	875	50.4	369
32. Causes Ill-defined or Unknown,	3	15	1	3	22	9.4	12
YEAR, 1930, ... ..	2,837	2,315	1,733	318	7,203	48.4	1,617
YEAR, 1929, ... ..	3,081	2,388	1,949	386	7,804	45.0	1,622

\* These percentages are based on the number of deaths occurring in and belonging to the City.

TABLE XI.—GLASGOW, 1930.—DEATHS OF PERSONS WITH INSTITUTIONAL OR HARBOUR ADDRESS ONLY WITHIN THE CITY, ARRANGED ACCORDING TO USUAL RESIDENCE AS REGISTERED. (OUTWARD TRANSFERS EXCLUDED.)

CAUSE OF DEATH.	Staff with Acquired Institu- tional Residence	OTHER THAN STAFF.							TOTAL.
		Corporation General Hospital and Poor houses.	Model Lodging Houses.	Other Institutions.	Harbour.	Residence out- with Glasgow but not transferable.	Residence out- with Scotland and not transferable.		
1. Enteric Fever, ... ..	—	—	1	—	—	—	—	1	
31A. Typhus Fever, ... ..	—	—	—	—	—	—	—	—	
2. Smallpox, ... ..	—	—	—	—	—	—	—	—	
3. Measles, ... ..	—	1	—	4	—	—	—	5	
4. Scarlet Fever, ... ..	—	2	—	1	—	—	—	3	
5. Whooping-cough, ... ..	—	—	1	—	—	—	—	1	
6. Diphtheria, ... ..	—	3	—	2	—	—	—	5	
7. Influenza, ... ..	—	—	3	1	1	—	—	5	
8. Encephalitis Lethargica,...	—	—	—	2	—	—	—	2	
9. Meningococcal Meningitis,	—	—	—	1	—	—	—	1	
31B. Erysipelas, ... ..	—	3	2	1	—	—	—	6	
10. Tuberculosis of Respiratory System, ... ..	1	6	32	3	4	—	1	47	
11A. Tuberculous Meningitis, ...	—	—	1	—	—	—	—	1	
11B. Abdominal Tuberculosis, ...	—	2	1	—	—	—	—	3	
11C. Other Tuberculous Diseases, ...	1	—	1	2	—	—	—	4	
12. Cancer (Malignant Disease), ...	2	6	35	5	—	—	3	51	
13. Rheumatic Fever, ... ..	—	—	—	—	—	—	—	—	
14. Diabetes, ... ..	—	—	—	1	—	—	—	1	
15. Cerebral Hæmorrhage, etc., ...	—	5	25	9	—	—	1	40	
31C. Meningitis (not Tuberculous), ...	—	—	1	—	—	—	—	1	
31D. Other Nervous Diseases,...	1	6	14	5	—	—	3	29	
16. Heart Disease, ... ..	—	19	97	19	—	—	3	138	
17. Arterio-sclerosis, ... ..	—	2	5	5	—	1	—	13	
31E. Other Circulatory Diseases, ...	—	1	2	1	—	—	—	4	
18. Bronchitis, ... ..	—	2	29	6	—	—	—	37	
19. Pneumonia (all forms), ... ..	3	9	45	9	3	—	4	73	
20. Other Respiratory Diseases, ...	—	2	10	4	—	—	—	16	
21. Ulcer of Stomach or Duodenum,	—	—	3	3	—	—	—	6	
22. Diarrhœa (under 2 years), ...	—	2	1	—	—	—	—	3	
23. Appendicitis, ... ..	—	—	2	—	—	—	2	4	
24. Cirrhosis of Liver, ... ..	—	1	5	1	—	—	1	8	
25. Acute and Chronic Nephritis, ...	—	—	12	1	1	—	—	14	
26. Puerperal Sepsis, ... ..	—	—	1	—	—	—	—	1	
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	—	1	1	
28. Congenital Debility and Malfor- mation, Premature Birth, ...	—	2	2	11	—	1	1	17	
29 { Suicide and Other Deaths from	1	—	24	5	12	—	5	47	
30 { Violence, ... ..									
31. Other Defined Diseases, ... ..	—	11	62	20	1	—	6	100	
32. Causes Ill-defined or Unknown,	—	—	19	—	1	—	—	20	
ALL CAUSES, ... ..	9	85	436	122	23	2	31	708	

TABLE XII.—GLASGOW.—DEATHS UNDER 1 YEAR AND DEATH-RATES PER 1,000 BIRTHS IN EACH MUNICIPAL WARD, FOR THE YEAR 1930.

MUNICIPAL WARDS.	Deaths -1 Year.	Death Rate per 1,000 Births.		
	1930.	1930.	1929.	1928.
1. Shettleston and Tollcross, ... ..	75	87	107	99
2. Parkhead, ... ..	97	104	114	126
3. Dalnarnock, ... ..	100	96	105	115
4. Calton, ... ..	121	131	150	161
5. Mile-end, ... ..	81	128	111	157
6. Whitevale, ... ..	66	126	98	135
7. Dennistoun, ... ..	27	70	80	101
8. Provan, ... ..	107	101	101	108
9. Cowlairst, ... ..	38	73	96	95
10. Springburn, ... ..	50	98	125	94
11. Townhead, ... ..	46	87	82	117
12. Exchange, ... ..	58	153	124	140
13. Blythswood, ... ..	29	124	155	131
14. Anderston, ... ..	65	105	125	117
15. Sandyford, ... ..	42	100	110	102
16. Park, ... ..	12	65	92	63
17. Cowcaddens, ... ..	117	120	115	134
18. Woodside, ... ..	87	103	95	113
19. Ruchill, ... ..	88	96	118	90
20. North Kelvin, ... ..	34	81	107	74
21. Maryhill, ... ..	60	102	92	97
22. Kelvinside, ... ..	2	11	27	49
23. Partick (East), ... ..	55	104	121	128
24. „ (West), ... ..	41	78	87	79
25. Whiteinch, ... ..	75	72	69	47
26. Hutchesontown, ... ..	131	124	123	98
27. Gorbals, ... ..	153	128	136	114
28. Kingston, ... ..	94	118	113	84
29. Kinning Park, ... ..	80	89	125	91
30. Govan, ... ..	121	122	128	110
31. Fairfield, ... ..	54	84	78	92
32. Pollokshields, ... ..	19	66	86	48
33. Camphill, ... ..	14	69	57	52
34. Pollokshaws, ... ..	17	49	49	88
35. Govanhill, ... ..	49	83	72	76
36. Langside, ... ..	8	49	47	51
37. Cathcart, ... ..	15	50	56	37
Institutions, ... ..	27	—	—	—
Harbour, ... ..	—	—	—	—
CITY, ... ..	2,355	101	107	107



TABLE XIII.—GLASGOW, 1930.—MALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total —4 weeks.	AGE IN MONTHS.								Total —1 year.			
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	
I. CONGENITAL MALFORMATIONS,...	21	2	6	2	31	12	4	5	3	1	2	—	—	—	—	58	
II. DISEASES OF EARLY INFANCY,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	412	
(a) Congenital Debility, Sclerema,	51	12	7	5	75	17	15	9	7	2	1	—	3	2	1	133	
and Icterus, ...	166	19	12	10	207	18	5	—	—	—	—	—	—	—	—	230	
(b) Premature Birth, ...	15	—	2	1	18	1	1	—	—	—	—	—	—	—	—	19	
(c) Injury at Birth, ...	17	—	—	2	19	1	2	—	—	—	—	—	—	—	—	22	
(d) Atelectasis, ...	4	2	—	—	6	2	—	—	—	—	—	—	—	—	—	8	
(e) Others, ...	5	4	12	13	34	46	34	39	43	33	35	32	24	29	28	393	
III. DISEASES OF RESPIRATORY SYSTEM,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	170	
IV. DISEASES OF DIGESTIVE SYSTEM,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	170	
(a) Diarrheal, ...	—	2	4	1	7	18	22	19	20	11	8	13	9	5	8	242	
(b) Others, ...	6	1	1	1	2	5	2	5	1	4	—	1	2	2	2	28	
V. DISEASES OF NERVOUS SYSTEM,	—	—	5	3	15	4	10	5	4	3	7	3	3	3	5	64	
VI. TUBERCULOUS DISEASES,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	24	
(a) Pulmonary Tuberculosis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	
(b) Tuberculous Meningitis,...	—	—	1	—	1	—	—	1	1	2	1	3	2	1	—	13	
(c) Abdominal Tuberculosis,	—	—	—	—	—	—	1	—	—	1	1	2	—	1	—	1	
(d) Other Forms, ...	—	—	—	—	—	1	—	—	—	1	1	2	—	1	—	9	
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	139	
(a) Measles, ...	—	—	—	—	—	—	1	1	—	4	6	7	3	7	11	52	
(b) Scarlet Fever, ...	—	—	—	—	—	—	—	—	1	—	—	2	2	—	—	4	
(c) Whooping-cough, ...	—	—	—	—	—	—	3	2	4	6	8	3	4	5	6	48	
(d) Diphtheria, ...	—	—	1	—	1	—	—	—	2	—	—	—	1	1	1	5	
(e) Erysipelas, ...	—	—	—	—	—	1	1	1	—	1	—	—	—	—	—	3	
(f) Meningococcal Meningitis,	—	—	—	—	—	—	—	4	3	5	3	4	2	1	2	26	
(g) Varicella, ...	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	
(h) Enteric Fever, ...	—	1	—	2	3	—	—	1	—	—	—	—	—	—	—	5	
VIII. SYPHILIS, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
IX. OVERLAYING, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
X. OTHER VIOLENCE, ...	—	1	—	2	3	—	5	—	1	2	—	—	1	—	—	14	
XI. ALL OTHER CAUSES, ...	4	5	3	3	15	11	6	1	7	—	3	6	2	3	1	58	
	289	49	53	46	437	139	112	95	94	75	75	76	56	60	69	49	1,337



TABLE XIV.—GLASGOW, 1930.—FEMALE INFANT DEATHS AT GIVEN AGES AND FROM SEVERAL CAUSES.

CAUSE OF DEATH.	AGE IN WEEKS.				Total — 4 weeks.	AGE IN MONTHS.								Total — 1 year.		
	AGE IN WEEKS.					AGE IN MONTHS.										
	-1	-2	-3	-4		-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
I. CONGENITAL MALFORMATIONS,...	24	5	6	3	38	6	5	1	2	1	1	—	—	—	—	54
II. DISEASES OF EARLY INFANCY.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	329
(a) Congenital Debility, Sclerema, and Icterus, ...	37	16	7	4	64	17	9	7	5	2	—	1	—	—	—	108
(b) Premature Birth, ...	128	18	15	6	167	8	4	1	—	—	—	—	—	—	—	180
(c) Injury at Birth, ...	10	2	1	1	13	1	—	—	—	—	—	—	—	—	—	14
(d) Atelectasis, ...	16	2	1	1	20	2	1	1	—	—	—	—	—	—	—	24
(e) Others, ...	1	1	1	—	3	—	—	—	—	—	—	—	—	—	—	3
III. DISEASES OF RESPIRATORY SYSTEM, ...	2	6	7	4	19	29	31	33	22	14	35	20	19	18	24	288
IV. DISEASES OF DIGESTIVE SYSTEM,	—	—	—	—	—	11	13	8	10	10	11	11	8	7	6	103
(a) Diarrhoeal, ...	—	2	3	1	6	1	1	1	3	3	2	3	1	1	1	8
(b) Others, ...	6	2	1	—	9	2	4	4	1	5	—	—	—	—	—	36
V. DISEASES OF NERVOUS SYSTEM, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19
VI. TUBERCULOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
(a) Pulmonary Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13
(b) Tuberculous Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(c) Abdominal Tuberculosis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
(d) Other Forms, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
VII. INFECTIOUS DISEASES, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	128
(a) Measles, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54
(b) Scarlet Fever, ...	—	—	—	—	—	—	1	1	1	2	4	4	6	11	7	2
(c) Whooping-cough, ...	—	—	—	—	—	—	3	2	4	3	4	6	4	6	7	51
(d) Diphtheria, ...	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	7
(e) Erysipelas, ...	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	3
(f) Meningococcal Meningitis, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10
(g) Varicella, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
(h) Enteric Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VIII. SYPHILIS, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
IX. OVERLAYING, ...	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	1
X. OTHER VIOLENCE, ...	—	—	1	—	1	1	2	—	—	—	—	—	—	—	—	1
XI. ALL OTHER CAUSES, ...	5	2	—	3	10	4	8	1	5	—	—	—	5	2	3	8
	231	56	42	23	352	89	83	66	53	43	62	51	45	57	48	69
																1,018

TABLE XV.—GLASGOW, 1928-1930.—ABSTRACT OF NOTIFICATIONS UNDER NOTIFICATION OF BIRTHS ACT, 1907, AND RESULTS OF VISITS.

	1930.	1929.	1928.
Total Number of Notifications, ... ..	24,407	23,917	24,720
Doctor at Home, ... ..	6,394	6,451	6,858
Doctor in Institution, ... ..	4,346	3,939	3,945
Maternity Hospital (Outdoor) Nurse, ... ..	3,975	3,742	3,670
Other Institutional Nurse, ... ..	3	—	—
Certified Midwife, ... ..	9,676	9,765	10,227
Others, ... ..	13	20	20
Total Cards issued, ... ..	18,013	17,466	17,862
Total Cards returned, ... ..	17,670	17,661	17,919
Full Information, ... ..	16,968	16,786	16,969
Doctor found in attendance, ... ..	7	17	33
Wrong Address—Not Traced, ... ..	—	—	—
Others, ... ..	695	858	917

TABLE XVI.—GLASGOW, 1928-1930.—BIRTHS NOTIFIED SHOWING MEDICALLY AND NOT MEDICALLY ATTENDED.

	1930	1929	1928
Notifications Received— <i>less Duplicates</i> —			
Total, ... ..	24,407	23,917	24,720
Live-births, ... ..	23,376	22,812	23,678
Still-births, ... ..	1,031	1,105	1,042
Per cent. Still-births to Total, ... ..	4·2	4·6	4·2
Medically attended—			
Total Births at Home, ... ..	6,394	6,451	6,858
In Institutions, ... ..	4,346	3,939	3,945
Total, ... ..	10,740	10,390	10,803
Per cent., ... ..	44·0	43·4	43·7
Still-births at Home, ... ..	250	254	241
Still-births in Institutions, ... ..	380	465	405
Not Medically attended—			
Maternity Hospital, Outdoor Nurse, ... ..	3,975	3,742	3,670
Other Institutional Nurses, ... ..	3	—	—
Certified Midwives, ... ..	9,676	9,765	10,227
Others, ... ..	13	20	20
Total, ... ..	13,667	13,527	13,917
Per cent., ... ..	56·0	56·6	56·3
Still-births, ... ..	401	386	396

TABLE XVII.—GLASGOW, 1929 AND 1930.—CASES OF INFECTIOUS DISEASE REGISTERED AND NUMBERS OF THESE TREATED IN FEVER HOSPITALS, &amp;c.†

	1930.				1929.			
	Fever Hosp.	Other Institutions.	Home.	Total.	Fever Hosp.	Other Institutions.	Home.	Total.
A.—Notifiable—								
Typhus Fever, ... ..	2	—	—	2	—	—	—	—
Enteric Fever, ... ..	46	1	2	49	39	2	4	45
Paratyphoid B, ... ..	86	3	2	91	36	—	4	40
Continued and Undefined Fever	3	—	1	4	3	—	2	5
Puerperal Fever, ... ..	389	168	41	598	330	151	35	516
Puerperal Pyrexia, ‡ ... ..	41	127	67	235	5	22	22	49
Smallpox, ... ..	3	—	—	3	22	—	—	22
Scarlet Fever, ... ..	4,639	2	319	4,960	3,120	1	233	3,354
Diphtheria and Membranous Croup, ... ..	2,542	6	73	2,621	2,052	9	57	2,118
Erysipelas, ... ..	645	39	575	1,259	588	30	480	1,098
Cholera, ... ..	—	—	—	—	—	—	—	—
Cerebro-Spinal Fever, ... ..	112	20	16	148	163	21	19	203
Ophthalmia Neonatorum, ... ..	58	—	764	822	55	—	585	640
Trachoma, ... ..	—	6	19	25	13	—	32	45
Acute Encephalitis Lethargica, ... ..	6	6	20	32	9	8	16	33
Acute Polio-Encephalitis, ... ..	3	—	—	3	1	—	—	1
Acute Poliomyelitis, ... ..	14	6	3	23	11	5	10	26
Acute Primary Pneumonia, ... ..	3,273	702	2,443	6,418	3,476	703	2,867	7,046
Acute Influenzal-Pneumonia, ... ..	153	19	175	347	399	125	655	1,179
Malaria, ... ..	1	1	20	22	3	11	18	32
Dysentery, ... ..	58	3	13	74	81	26	12	119
Infective Jaundice, ... ..	—	1	4	5	—	—	—	—
Pulmonary Tuberculosis, ... ..	957	—	730	1,687	965	—	839	1,804
Other Forms of Tuberculosis, ... ..	433	—	614	1,047	359	—	633	992
B.—Not Notifiable—								
Measles, ... ..	1,049	51	11,304	12,404	608	16	5,844	6,468
German Measles, ... ..	18	—	150	168	181	2	1,275	1,458
Whooping-cough, ... ..	506	13	5,268	5,787	556	3	4,545	5,104
Chickenpox,* ... ..	207	46	6,952	7,205	247	32	7,824	8,103
Mumps, ... ..	8	—	1	9	10	—	—	10
Beri-Beri, ... ..	6	—	—	6	—	—	—	—
Totals, ... ..	15,258	1,220	29,576	46,054	13,332	1,167	26,011	40,510
Notified, but diagnosis altered to Non-Infectious Diseases, ... ..	1,279	2	4	1,285	1,025	3	10	1,038
Total Registered, ... ..	16,537	1,222	29,580	47,339	14,357	1,170	26,021	41,548

† Where patients suffer from two or more diseases, each disease is reckoned as a case.

‡ Made compulsorily notifiable from 1st October, 1929.

\* Made compulsorily notifiable in March, 1927.

TABLE XVIII.—GLASGOW, 1926-1930.—CASE-RATES *per Million*  
FOR INFECTIOUS DISEASES.

	CASE RATES PER MILLION.				
	1930.	1929.	1928	1927.	1926.*
A.—Notifiable—					
Typhus Fever, ... ..	2	—	—	—	7
Enteric Fever & Paratyphoid B, ...	129	78	53	136	93
Continued and Undefined Fever, ...	4	5	4	5	4
Puerperal Fever, ... ..	549	474	379	254	286
Puerperal Pyrexia, ... ..	216	45	—	—	—
Smallpox, ... ..	3	20	—	—	—
Scarlet Fever, ... ..	4,555	3,079	2,971	3,777	4,365
Diphtheria and Membranous Croup, ...	2,407	1,945	2,414	2,785	2,138
Erysipelas, ... ..	1,156	1,008	846	778	947
Cholera, ... ..	—	—	—	—	—
Cerebro-Spinal Fever, ... ..	136	186	94	72	62
Ophthalmia Neonatorum, ... ..	755	588	635	598	617
Trachoma, ... ..	23	41	28	45	40
Acute Encephalitis Lethargica, ...	29	30	31	21	40
Acute Polio-Encephalitis, ... ..	3	1	2	—	3
Acute Poliomyelitis, ... ..	21	24	109	12	9
Acute Primary Pneumonia, ... ..	5,895	6,469	5,202	5,392	5,738
Acute Influenzal-Pneumonia, ... ..	319	1,082	371	344	496
Malaria, ... ..	20	29	22	17	21
Dysentery, ... ..	68	109	41	27	11
Infective Jaundice, ... ..	5	—	—	—	1
Pulmonary Tuberculosis, ... ..	1,549	1,656	1,582	1,489	1,614
Other Forms of Tuberculosis, ... ..	962	911	1,016	1,010	931
B.—Not Notifiable—					
Measles, ... ..	11,393	5,938	9,268	8,241	15,019
German Measles, ... ..	154	1,339	241	159	434
Whooping-cough, ... ..	5,315	4,686	7,454	9,168	3,558
Chickenpox, ... ..	6,617	7,440	5,105	7,215	5,329
Others, ... ..	13	9	12	5	4
Totals, ... ..	42,298	37,192	37,880	41,550	41,767

\*Added Area not included.

TABLE XIX.—

## CASES OF INFECTIOUS DISEASE REGISTERED IN EACH MONTH—SHOWING NUMBERS

	Typhus Fever.		Enteric, including Paratyphoid Fever.		Continued and Undefined Fever.		Puerperal Fever.		Puerperal Pyrexia.		Smallpox.		Scarlet Fever.		Diphtheria and Membranous Croup.		Erysipelas.		Cerebro-Spinal Fever.		Ophthalmia Neonatorum.		Trachoma.		Acute Encephalitis Lethargica.		Acute Polio-Encephalitis.		Acute Poliomyelitis.	
	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.
Jan., ...	...	...	3	1	1	...	25	15	4	13	...	...	389	33	246	14	64	68	11	2	4	57	...	2	...	1	...	...	...	
Feb., ...	...	...	5	...	...	...	26	15	7	15	...	...	290	18	218	6	55	55	7	2	6	62	...	3	1	3	...	2	...	
March, ...	...	...	12	1	...	...	36	18	2	19	...	...	285	15	216	8	54	51	18	7	5	75	...	2	...	4	...	1	...	
April, ...	...	...	8	2	...	...	39	12	4	20	...	...	258	24	191	7	47	53	10	4	6	63	...	4	...	4	...	...	...	
May, ...	2	...	5	...	1	...	33	29	5	30	3	...	314	17	166	1	52	51	9	7	4	79	...	2	...	2	...	...	...	
June, ...	...	...	14	...	1	...	38	13	1	6	...	...	304	8	165	5	37	33	12	5	5	61	...	3	...	3	1	1	1	
July, ...	...	...	24	1	...	1	33	19	4	14	...	...	257	3	139	3	37	34	11	2	3	52	...	1	...	1	1	2	1	
August,...	...	...	22	1	...	...	25	13	2	12	...	...	366	8	171	1	44	30	5	2	6	66	...	1	2	1	...	5	2	
Sept., ...	...	...	18	1	...	...	33	9	3	9	...	...	540	30	265	7	64	42	8	1	5	63	...	3	...	...	...	2	4	
October, ...	...	...	8	...	...	...	42	23	1	20	...	...	678	62	324	6	69	67	8	3	1	67	...	2	1	1	...	...	1	
Nov., ...	...	...	8	...	...	...	26	23	5	12	...	...	532	72	220	10	57	55	5	...	4	49	...	2	...	1	1	...	...	
Dec., ...	...	...	5	1	...	...	33	20	3	24	...	...	426	31	221	11	65	75	8	1	9	70	...	...	2	5	...	1	...	
	2	...	132	8	3	1	389	209	41	194	3	...	4639	321	2542	79	645	614	112	36	58	764	...	25	6	26	3	14	9	



## GLASGOW.

## TREATED IN FEVER HOSPITALS DURING 1930.

Acute Primary Pneumonia.		Acute Influenzal Pneumonia.		Malaria.		Dysentery.		Pulmonary Tuberculosis.		Other Forms of Tuberculosis.		Measles.		German Measles.		Whooping-cough.		Chicken pox.		TOTALS.	
Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.	Hosp.	Others.
320	395	8	20	...	4	...	2	84	55	19	54	275	3090	1	29	19	384	11	787	1484	5026
259	309	13	15	...	1	3	...	76	49	26	55	249	3507	2	41	32	363	10	552	1287	5071
311	330	18	25	...	3	7	1	94	71	35	57	216	2952	2	16	49	525	21	881	1382	5061
295	287	41	29	...	...	5	2	98	80	58	69	152	992	...	9	57	411	15	572	1284	2644
270	184	18	14	...	1	...	1	100	71	58	66	75	498	5	10	61	736	14	635	1195	2434
217	113	10	5	1	...	5	...	92	63	41	62	27	159	1	5	42	353	13	568	1028	1466
177	91	2	1	...	4	9	1	79	47	26	29	22	10	...	1	33	31	23	164	882	511
160	47	4	...	...	1	2	...	63	47	29	33	19	30	...	5	37	462	4	194	966	956
161	77	7	2	...	2	6	3	63	58	33	44	7	30	3	8	37	299	18	415	1273	1107
246	130	13	9	...	1	8	4	90	56	47	50	4	39	2	10	54	426	23	724	1619	1701
369	404	10	21	...	1	10	1	62	53	38	38	2	28	...	10	37	615	25	820	1411	2215
488	778	9	53	...	3	3	1	56	80	23	57	1	20	2	6	48	676	30	686	1433	2598
3273	3145	153	194	1	21	58	16	957	730	433	614	1049	11355	18	150	506	5281	207	6998	15244	30790
Add—Others,.....																				14	6
Altered Diagnoses, ...																				1279	6
																				<u>16,537</u>	<u>30,802</u>

TABLE XX.—HOSPITAL BED ACCOMMODATION FOR INFECTIOUS DISEASES  
IN GLASGOW SINCE 1865 (EXCLUDING TUBERCULOSIS).

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.						Total Beds.	Population in Thousands.	Beds per Thousand.
	City.	Barony.	Govan.		Parliamen- tary Road.	Belvidere Fever.	Belvidere Smallpox.	Ruehill.	Shieldhall.	Knights- wood.			
1865	100	120	54	200	136	—	—	—	—	—	610	428	1.4
1866	100	120	54	175	136	—	—	—	—	—	585	438	1.3
1867	—	120	54	100	136	—	—	—	—	—	410	446	0.9
1869	—	120	54	135	136	—	—	—	—	—	445	464	1.0
1870	—	120	54	100	250	250	—	—	—	—	774	471	1.7
1872	—	120	—	100	250	250	—	—	—	—	720	495	1.4
1875	—	—	—	100	250	250	—	—	—	—	600	500	1.2
1876	—	—	—	—	250	250	—	—	—	—	500	502	1.0
1878	—	—	—	—	120	250	150	—	—	—	520	507	1.0
1880	—	—	—	—	120	250	150	—	—	—	520	510	1.0
1881	—	—	—	—	120	370	150	—	—	—	640	512	1.2
1882	—	—	—	—	120	220	150	—	—	—	490	518	1.0
1887	—	—	—	—	120	390	150	—	—	—	660	545	1.2
1893	—	—	—	—	200	390	150	—	—	—	740	678	1.1
1900	—	—	—	—	200	390	150	440	—	—	1,180	744	1.6
1901	—	—	—	—	200	390	220	440	—	—	1,250	764	1.6
1906	—	—	—	—	—	390	220	440	—	—	1,050	836	1.3
1910	—	—	—	—	—	390	220	542	—	—	1,152	884	1.3
1913	—	—	—	—	—	390	220	542	100	81	1,333	1,032	1.3
1915	—	—	—	—	—	390	220	542	100	10	1,262	1,035	1.2
1923	—	—	—	—	—	610	—	542	100	114	1,366	1,074	1.3
1925	—	—	—	—	—	610	—	542	100	134	1,386	1,090	1.3
1926	—	—	—	—	—	610	—	542	120	134	1,406	1,090	1.3
1929	—	—	—	—	—	610	—	542	100	170	1,422	1,089	1.3
1930	—	—	—	—	—	666	—	542	100	170	1,478	1,089	1.4

Smallpox accommodation is provided (20 beds) in Robroyston Auxiliary Hospital.

The City has also a part interest in Lightburn Hospital—about 7.8 beds.

"	"	"	Darnley	"	"	20	"
"	"	"	Blawarthill	"	"		

TABLE XX.—(Continued).

## INSTITUTIONAL ACCOMMODATION FOR FEVER AND TUBERCULOSIS PATIENTS:—

				Fever.	Tuberculosis.	Total.
Belvidere Hospital,	...	...	...	666	—	666
Ruchill Hospital, ...	...	...	...	542	272	814
Shieldhall Hospital,	...	...	...	100	—	100
Knightswood Hospital,	...	...	...	170	88	258
Bellefield Sanatorium,	...	...	...	—	108	108
Robroyston Sanatorium,	...	...	...	20	548	568
Mearns Kirk Sanatorium, ...	...	...	...	—	466	466
Baird St. Reception House,	...	...	...	—	7	7
				1,498	1,489	2,987
Stobhill General Hospital,	...	...	...	—	89	89
Eastern District General Hospital,	...	...	...	—	2	2
Western District General Hospital,	...	...	...	—	3	3
				—	94	94*
Barnhill Institution,	...	...	...	—	52	52
Southern General Hospital,	...	...	...	—	19	19
				—	71	71*
Beds in Corporation Institutions,	...	...	...	1,498	1,654	3,152
Ochil Hills Sanatorium, ...	...	...	...	—	64	64
Bridge of Weir Sanatorium,	...	...	...	—	69	69
Dunblane Sanatorium,	...	...	...	—	12	12
Seaforth Sanatorium,	...	...	...	—	14	14
Hairmyres Sanatorium,	...	...	...	—	4	4
Lanfine Home,	...	...	...	—	30	30
Darnley Hospital,...	...	...	...	—	10	10
Strathblane Hospital,	...	...	...	—	10	10
Beds in other Institutions,	...	...	...	—	213	213*
TOTAL, ...	...	...	...	1,498	1,867	3,365

\* Average daily number occupied during 1930.

TABLE

SHOWING NUMBER, AVERAGE RESIDENCE, AND

ORDINARY NETT EXPENDITURE (as per Treasurer's Statement), excluding Interest and Sinking Fund Charges:—

Infectious Diseases Hospital, Belvidere, ...	£65,263	16	10
Infectious Diseases Hospital, Ruchill, ...	96,190	0	3
Infectious Diseases Hospital, Shieldhall, ...	13,775	5	0
Infectious Diseases Hospital, Knightswood, ...	25,757	15	8
Sanatorium and Auxiliary Hospital, Robroyston, ...	52,106	1	9
Bellefield Sanatorium, ...	12,030	16	8
Mearns Kirk Hospital, ...	7,012	19	9
	<u>£272,136 15 11</u>		

Average Residence of Patients dismissed, 1929-1930, ... 54.59 days.

Average Daily Expenditure, ...	£745	11	7
Average Daily Cost per Patient, ...	0	6	6
Average Cost of Treatment per Patient, ...	17	15	2
Average Cost of Bed per Year, ...	118	12	6

NUMBER OF PATIENTS TREATED IN HOSPITALS AND SANATORIA  
AND AVERAGE DAILY COST PER PATIENT.

	Remain- ing, 31/5/29.	Admitted 1929/30.	Total under Treatment.	Dismissed, 1929/30.	Remain- ing 31/5/30.	Average Daily Number.	Average Daily Cost per Patient.
Belvidere Hospital, ...	541	5,723	6,264	5,763	501	574	6/3
Ruchill Hospital, ...	734	5,580	6,314	5,593	721	774	6/10
Shieldhall Hospital, ...	91	1,039	1,130	1,038	92	96	7/11
Knightswood Hospital, ...	188	2,096	2,284	2,013	271	218	6/6
Robroyston Sanatorium and Auxiliary Hospital, ...	519	564	1,083	569	514	538	5/4
Bellefield Sanatorium, ...	50	208	258	148	110	89	7/5
Mearns Kirk Hospital, ...	—	72	72	—	72	3	—
Total, ...	2,123	15,282	17,405	15,124	2,281	2,292	6/6*

Darnley Joint Hospital, ...	23	85	108	85	23	18	—
Lightburn Joint Hospital, ...	23	183	206	192	14	22	—
Blawarthill Joint Hospital, ...	7	56	63	55	8	5	—
Grand Total, ...	2,176	15,606	17,782	15,456	2,326	2,337	—

\* Interest and Sinking Fund averages 1/11 per patient day.

## XXI.

## COST OF TREATMENT OF PATIENTS, 1929-1930.

PATIENTS DISMISSED FROM CORPORATION INSTITUTIONS, CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE OF PATIENTS DISMISSED, AND AVERAGE COST AT THE DAILY RATE GIVEN ABOVE.

DISEASE.	NUMBER DISMISSED.	AVERAGE RESIDENCE.	AVERAGE COST.
Typhus Fever, ... ..	1	4.00 days	£1 6 0
Smallpox, ... ..	9	44.11 „	14 6 11
Enteric Fever, ... ..	78	46.41 „	15 1 11
Anthrax, ... ..	—	—	—
Puerperal Fever, ... ..	363	36.25 „	11 15 10
Scarlet Fever, ... ..	3,352	43.68 „	14 4 2
Diphtheria, ... ..	2,256	44.16 „	14 7 4
Encephalitis Lethargica, ... ..	6	62.50 „	20 6 8
Poliomyelitis, ... ..	12	81.17 „	26 8 1
Trachoma, ... ..	19	64.74 „	21 1 2
Acute Primary Pneumonia and Influenzal- Pneumonia, ... ..	3,264	29.58 „	9 12 5
Tropical Diseases, ... ..	98	28.00 „	9 2 2
Measles and German Measles, ... ..	1,467	28.69 „	9 6 8
Whooping-Cough, ... ..	425	50.86 „	16 10 10
Phthisis, ... ..	1,252	144.07 „	46 17 4
Non-Pulmonary Tuberculosis, ... ..	416	378.65 „	123 3 6
*Other Infectious Diseases, ... ..	1,178	28.22 „	9 3 7
†All other Diseases, ... ..	928	26.88 „	8 14 10
	<u>15,124</u>		

\* Includes Erysipelas, Cerebro-spinal Fever, Chickenpox, and Influenza.

† Includes Nursing Mothers, also Persons sent in by mistaken diagnosis.



TABLE XXII.—GLASGOW.—STATUTORY DECLARATIONS OF CONSCIENTIOUS  
OBJECTION TO VACCINATION IN EACH WARD DURING 1930.

MUNICIPAL WARDS.	Conscientious Objections Lodged.	Percentage of Births Registered.		
		1930.	1929.	1928.
1. Shettleston and Tollcross	204	24	25	20
2. Parkhead, ... ..	254	27	23	24
3. Dalmarnock, ... ..	303	29	29	21
4. Calton, ... ..	211	23	25	18
5. Mile-end, ... ..	149	24	24	21
6. Whitevale, ... ..	152	29	24	22
7. Dennistoun, ... ..	75	19	15	15
8. Provan, ... ..	240	23	23	21
9. Cowlares, ... ..	185	35	41	31
10. Springburn, ... ..	202	39	35	37
11. Townhead, ... ..	178	34	27	26
12. Exchange, ... ..	93	24	25	18
13. Blythswood, ... ..	37	16	16	18
14. Anderston, ... ..	131	21	17	20
15. Sandyford, ... ..	78	19	17	15
16. Park, ... ..	34	18	15	19
17. Cowcaddens, ... ..	223	23	20	20
18. Woodside, ... ..	172	20	18	14
19. Ruchill, ... ..	253	28	26	25
20. North Kelvin, ... ..	101	24	22	19
21. Maryhill, ... ..	144	25	24	18
22. Kelvinside, ... ..	15	8	14	6
23. Partick (East), ... ..	132	25	18	20
24. „ (West), ... ..	128	24	27	23
25. Whiteinch, ... ..	255	25	27	29
26. Hutchesontown, ... ..	356	34	31	29
27. Gorbals, ... ..	309	26	24	23
28. Kingston, ... ..	248	31	32	30
29. Kinning Park, ... ..	241	27	33	26
30. Govan, ... ..	447	45	40	38
31. Fairfield, ... ..	310	48	48	41
32. Pollokshields, ... ..	67	23	22	19
33. Camphill, ... ..	42	21	17	10
34. Pollokshaws, ... ..	114	33	48	33
35. Govanhill, ... ..	181	30	28	30
36. Langside, ... ..	40	25	13	11
37. Cathcart, ... ..	74	24	18	21
Institutions, &c., ... ..	7	—	—	—
	6,385	27	26	24

TABLE XXIII.—GENERAL SANITARY OPERATIONS.—(a) FOOD AND DRUGS, &amp;c.

	Year.	1930.	1929.	1928.
<b>I. Dairies.</b>				
Registered during year, ... ..		221	216	246
Removed from Register, ... ..		207	199	215
On Register at 31st Dec., ... ..		1,690	1,676	1,659
Number of Inspections, ... ..		23,271	23,322	22,571
Contraventions of Orders or Regulations, ... ..		19	22	23
Prosecutions for same, ... ..		11	14	11
Repairs or Improvements effected, ... ..		19	12	17
<b>II. Dealers in Ice Cream.</b>				
Registered during the year, ... ..		65	65	59
Removed from Register, ... ..		78	49	55
On Register at 31st Dec., ... ..		605	618	602
Number of Inspections, ... ..		9,389	9,734	9,397
Contraventions of Orders or Regulations, ... ..		2	—	8
Prosecutions for same, ... ..		1	—	—
Repairs or Improvements effected, ... ..		3	5	8
<b>III. Byres for Milch Cows.</b>				
Number of Dairy Byres as at 31st Dec., ... ..		53	53	52
„ Cows licensed for, ... ..		1,217	1,217	1,199
Average number kept, ... ..		1,025	1,035	957
Number of Inspections, ... ..		550	453	529
<b>IV. Unwholesome Food.</b>				
Number of Inspections, ... ..		13,419	13,418	13,148
„ Lots dealt with, ... ..		37	54	38
Nature of Food destroyed at Inspector's instance with Owner's consent—				
Cheese, ... .. (lbs.)		—	210	—
Canned Food (various) ... ..		—	1,688	1,610
Fruit (Dried and Soft), ... ..		4,666	24,296	34,188
Pork (Cured), ... ..		289	168	424
Pork and Brawn, ... ..		—	36	—
Confections, ... ..		—	—	168
Pickles, ... ..		—	24	—
Poultry, ... ..		—	—	90
Vegetables, ... ..		16,148	58,006	54,460
Eggs (Canned and Frozen), ... ..		44	22	22
„ (in shell), ... ..		—	1,356	—
Chestnuts, ... ..		4,704	—	—
Potted Meat, ... ..		66	—	—
Sauce, ... .. (Quart bots.)		—	30	—
Prosecutions, ... ..		—	—	—

TABLE XXIII.—Continued.

Year.	1930.	1929.	1928.
<b>V. Food and Drugs (Adulteration) Act.</b>			
Informal Samples analysed, ... ..	3,913	3,875	3,902
Statutory Samples analysed, ... ..	1,355	1,336	1,333
"      "      found non-genuine, ... ..	68	71	106
Proceedings instituted, ... ..	54	57	50
Number of Convictions, ... ..	54	51	49
Amount of Fines imposed, ... ..	£210	£223 2/-	£204 12/-
Number dismissed or found "Not proven," ...	—	1	1
"      deserted <i>simpliciter</i> , ... ..	—	—	—
"      withdrawn and Expenses paid ... ..	—	5	—
Amount of Expenses paid. ... ..	—	£7 17/6	—
Prosecutions for Margarine offences, ... ..	—	7	5
Fines and Expenses imposed, ... ..	—	£16	£13
Non-convictions, ... ..	—	—	—
Obstruction, ... ..	—	—	—
Fines imposed, ... ..	—	—	—
Vending Milk without name and address being on vessel,	—	—	—
Number of Convictions, ... ..	—	—	—
Amount of Fines, ... ..	—	—	—
Refusal to Sell, ... ..	—	—	—
Number of Convictions, ... ..	—	—	—
Amount of Fines, ... ..	—	—	—
<b>VI. The Sale of Horse-Flesh Regulation Act, 1889.</b>			
Number of premises in which Horse-flesh is sold, ...	—	—	—
Prosecutions for contravention of Act, ... ..	—	—	—
Fines imposed, ... ..	—	—	—
<b>VII. Merchandise Marks Acts and Orders.</b>			
Number of Prosecutions, ... ..	16	10	—
"      Convictions, ... ..	14	10	—
Amount of Fines imposed, ... ..	£31	£57	—
<b>VIII. Fish and Game Inspection.</b>			
Under the Glasgow Police Amendment Act, 1890.			
Number of Packages of Fish, Game, Poultry, and Rabbits passed through Fish Market, ... ..	1,855,056	1,704,115	1,764,075
"      Inspections of Fish Shops, Restaurants, and Hawkers' Barrows and Carts, ... ..	1,176	1,367	1,486
"      Nuisances discovered therein, ... ..	—	—	—
Fish and Game destroyed with consent—			
Fresh Fish, ... .. (lbs.)	119,059	94,969	98,842
Cured " ... ..	15,504	22,872	15,751
Shell " ... ..	770	144	362
Crabs and Lobsters, ... ..	202	36	653
Venison, ... ..	1,404	234	1,259
Rabbits, ... ..	3,274	2,696	1,465
Poultry and Game, ... ..	2,370	2,444	4,897
Eggs, ... ..	50	68	152

TABLE XXIII.—*Continued.*

## (b) AIR PURIFICATION.

	Year.	1930.	1929.	1928.
<b>Smoke Prevention.</b>				
Glasgow Police (Further Powers) Act, 1892, Sec. 31.				
Number of Inspections of Boiler and other Furnaces,		1,436	1,372	1,453
" Observations of Chimneys, ... ..		28,464	28,893	28,491
" Intimations of Excess Smoke given, ...		342	359	344
" Warning Notices to those contravening the Act, ... ..		16	19	26
" Prosecutions in Police Courts, ... ..		35	24	57
" Convictions, ... ..		31	20	53
Amount of Fines imposed, ... ..		£44 10/6	£32 1/-	£61 0/6
Number of Prosecutions withheld on receiving a promise from Offenders to improve the Furnace Plant, ... ..		—	4	5
" Prosecutions withheld on account of accidents to Furnace Plant, or regular Fireman temporarily off duty, ... ..		—	1	1
" New Steam Boilers installed to give increased power, ... ..		20	8	13
" Mechanical Stokers fitted to Steam Boiler Furnaces, ... ..		5	1	7
" Steam Boiler Furnaces fitted with Smoke-preventing Appliances, ... ..		9	5	4
" Furnaces in which Anthracite, Coke, or other non-bituminous Fuel has been substituted for ordinary Coal, ... ..		20	15	11
" Furnaces adapted for Smokeless Combustion of Oil Fuel, ... ..		1	1	3
" Steam Boilers replaced by Electric Motors (using Corporation power), ... ..		3	5	13
" Furnaces formerly Coal-fired, reconstructed for use of Corporation gas, ... ..		—	—	9
" New Chimneys erected or existing Chimneys heightened to give increased draught and carry gases higher, ... ..		14	6	8
" Improvements to Furnaces not coming under any of the above headings, ... ..		6	4	8
<b>Spraying Dungsteads, Ashpits and Privies.</b>				
Total number of Dungsteads Sprayed from May till September, ... ..		17,080	18,745	18,180
Total Outlay for Wages, Plant, and Material, ... ..		£480	£474	£441
<b>Interments.</b>				
For year ending 31st May.				
Total number of Applications granted for Interment of Unclaimed and other Bodies, ... ..		*316	362	359
Total Expenditure, ... ..		*£714 10/6	£867 13 10	£843 1/-
Payment of Costs recovered, ... ..		*£261 8/5	£242 14 1	£283 12/11

\* To 15th May, 1930

TABLE XXIII.—*Continued.*

## (c) OPERATIONS OF SANITARY SECTION.

1 (a) Nuisances.	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
INSPECTIONS made—						1930	1929
Nuisances, ... ..	135,175	139,241	192,857	166,434	165,686	799,393	798,693
Underground Dwellings, ... ..	—	—	—	—	—	—	—
Water Storage Cisterns, ... ..	124	478	897	540	5	2,044	3,149
Limewashings, ... ..	4,182	3,057	8,619	3,463	10,092	29,413	32,994
Stair Cleaning, ... ..	26,180	8,051	18,982	5,647	19,697	78,557	85,790
Drain Testing, ... ..	19,596	12,078	7,756	5,979	4,873	50,282	51,943
Total, ... ..	185,257	162,905	229,111	182,063	200,353	959,689	972,576
Nuisances removed or remedied, Consisting of—	10,554	10,769	14,288	9,007	16,817	61,435	69,465
Apartments, Lobbies, or W.C.'s, with insufficient light or ventilation, or otherwise defective in construction, ... ..	15	—	—	3	4	22	43
Defective Chimneys causing nuisance, ... ..	175	127	97	62	148	609	586
Disrepair or dampness in Dwelling-houses, ... ..	1,219	720	1,784	1,083	2,464	7,270	6,469
Offensive smells from Drains, or other reasonable grounds — smoke test, ... ..	174	286	150	126	64	800	668
Drains, Conductors, Soil-pipes, or Rhones choked or defective, Sanitary Fittings choked or defective, ... ..	3,388	4,696	4,899	3,418	5,470	21,871	25,166
Dirty Houses and Bedding, ... ..	1,244	937	1,408	685	2,252	6,526	8,922
Dirty Closets, Stairs, &c. (daily and bi-weekly cleansing), ... ..	285	667	701	367	60	2,080	2,049
Houses overcrowded, ... ..	591	438	1,293	813	1,574	4,709	5,077
Walls of Closets, Staircases, Lobbies, W.C.'s, and external walls of Houses, filthy (lime-washing), ... ..	—	1	—	1	1	3	6
Animals or Poultry kept so as to be a nuisance, ... ..	1,586	1,678	1,889	872	1,159	7,184	8,042
Accumulations of Garbage or Rubbish, ... ..	—	—	2	3	9	14	30
Smells from Decaying Animal Matter or other cause, ... ..	608	158	428	318	420	1,932	1,919
Stagnant Water, ... ..	35	14	12	11	34	106	112
Premises infested with Rats or other vermin, ... ..	25	9	6	8	74	122	101
Sink accommodation and Water Supply required, ... ..	15	56	16	30	76	193	172
Water-Closet accommodation required, ... ..	5	1	—	1	—	7	14
Water Storage Cisterns dirty, uncovered or unventilated, ... ..	11	1	4	26	9	51	44
Water Supply Pipes defective—tenants without water, ... ..	61	64	430	410	2	967	810
	130	145	275	51	197	798	1,562



TABLE XXIII.—*Continued.*(c) OPERATIONS OF SANITARY SECTION—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1930	1929
Pit Shaft without adequate protection, ... ..	—	2	—	—	—	2	1
Reports to Gas Manager, ...	2	3	—	1	—	6	11
„ Master of Works, ...	427	349	457	333	1,405	2,971	2,817
„ Superintendent of Cleansing, ...	18	4	4	5	177	208	244
„ Water Engineer, ...	540	413	433	380	1,218	2,984	4,600
Prosecutions—Sheriff Court, ...	—	1	—	2	—	3	10
„ Police Court, ...	22	8	3	11	10	54	33
Number Successful, ...	21	8	3	13	10	55	40
Amount of Fines, ...	£8/12/6	£7/13/0	£4/5/0	£6/6/6	£4/8/6	£31/5/6	£13/19/6
Number of Rotation Cards for Cleansing of Common Stairs, Lobbies, and W.C.'s served on Tenants, ... ..	1,975	1,252	1,593	1,084	1,403	7,307	6,126
<b>1. (b) Drain Testing.</b>							
Number of Applications for satisfaction of Dean of Guild Court,... ..	612	529	493	2,279	258	4,171	6,049
Number of first Applications to old Tenements or Systems, ...	173	265	177	144	114	873	850
Number of these found more or less defective, ... ..	158	257	147	131	101	794	737
Subsequent applications to old Tenements or Systems, ...	207	346	138	115	59	865	847
<b>2. Common Lodging Houses.</b>							
Number measured and registered	—	—	—	—	—	—	—
Total number now on register, ...	13	7	11	2	4	37	37
With accommodation for ...	3,119	2,165	2,839	791	1,756	10,670	10,658
Number of inspections by day, ...	618	99	527	22	438	1,704	1,687
Number of inspections by night, ...	59	6	32	4	6	107	118
Number of irregularities, ...	31	—	11	25	38	105	74
Number of prosecutions, ...	—	—	—	—	—	—	—
<b>3. Boarding Houses for Emigrants and Seamen.</b>							
Number measured and registered	—	—	—	—	—	—	—
Total number now on register, ...	10	—	—	—	1	11	11
With accommodation for ...	441	—	—	—	53	494	494
Number of inspections by day, ...	551	—	—	—	63	614	507
Number of inspections by night, ...	55	—	—	—	—	55	63
Number of irregularities, ...	—	—	—	—	—	—	—
Number of prosecutions, ...	—	—	—	—	—	—	—

TABLE XXIII.—*Continued.*(c) OPERATIONS OF SANITARY SECTION—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
<b>4. Houses-Let-in-Lodgings.</b>						1930	1929
Number measured and registered	5	8	—	2	—	15	—
Total number now on register,	11	15	8	14	12	60	52
Number of inspections by day,	137	68	49	19	24	297	280
Number of inspections by night,	52	12	6	—	15	85	58
Number of irregularities, ...	4	—	—	—	—	4	—
Number of prosecutions, ...	—	—	—	—	—	—	—
<b>5. Farmed-out Houses.</b>							
Number measured and registered	—	—	—	—	—	—	16
Total number now on register,	447	34	211	44	12	748	786
Number of inspections by day,	2,351	211	2,723	1,127	403	6,815	5,460
Number of inspections by night,	2,195	175	527	88	24	3,009	3,110
Number of irregularities, ...	514	36	81	34	—	665	487
Number of prosecutions, ...	5	—	—	—	—	5	—
Number of successful, ...	5	—	—	—	—	5	—
Amount of fines, ...	£1/10	—	—	—	—	£1/10	—
<b>6. Ticketed Houses.</b>							
Number ticketed for first time,	—	—	—	—	—	—	—
Total number now on register,	2,433	5,032	3,755	1,713	1,325	14,258	15,290
Number of visits for ticketing and re-ticketing, ...	—	—	—	—	—	—	18
Number of inspections by night,	12,384	11,925	8,776	1,752	1,391	36,228	44,784
Number of cases of Overcrowding found and warned,	1,215	2,025	1,268	146	147	4,801	5,718
Number of prosecutions, ...	—	—	—	—	—	—	1
Cubic feet of space in worst cases of Overcrowding, instead of 400, only, ...	133, 141, 155	150, 150, 172	123, 174, 237	190, 147,	144, 150, 144, 122,	—	117
Number of cases of Overcrowding in houses under 900 cubic feet of space, ...	66	33	39	7	1	146	170
<b>7. Tents and Vans.</b>							
Number of inspections, ...	135	237	2,649	23	152	3,196	3,129
Number of irregularities, ...	—	—	80	—	—	80	31
<b>8. Workshops and Workplaces (excluding Bakehouses).</b>							
Number measured and registered	76	29	33	30	26	194	263
Total number now on register,	1,492	500	500	495	627	3,614	3,633
Number of inspections, ...	10,568	1,418	3,256	2,063	1,299	18,604	15,149
Number found dirty, ...	165	37	67	40	36	345	358
Number found Overcrowded, ...	—	—	—	—	—	—	1
Number found defective in light or ventilation, ...	7	—	1	4	2	14	10
Number found with inadequate or defective W.C. or sink accommodation, ...	6	6	4	3	10	29	21
Number of other nuisances, ...	297	13	21	5	36	372	354
Number of prosecutions, ...	—	—	—	1	—	1	—

TABLE XXIII.—*Continued.*(c) OPERATIONS OF SANITARY SECTION—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
						1930	1929
<b>9. Bakehouses.</b>							
Registered during year, ...	9	4	10	6	1	30	43
Total number now on register, ...	101	79	129	107	108	524	487
Number of inspections, ...	750	278	653	529	243	2,453	2,377
Number found dirty, ...	51	29	22	14	11	127	162
Number of other nuisances, ...	40	2	7	14	14	77	58
Number of prosecutions, ...	—	—	—	—	—	—	—
<b>10. Homeworkers' Dwellings.</b>							
Total number now on register, ...	37	95	71	111	59	373	416
Number of inspections, ...	89	121	434	140	59	843	1,105
Number found dirty, ...	—	1	—	—	—	1	1
<b>11. Piggeries.</b>							
Total number now on register, ...	9	24	8	3	6	50	50
Number of inspections, ...	73	106	68	17	12	276	328
Number found dirty, ...	—	14	4	1	—	19	14
Number of other nuisances, ...	—	1	1	—	—	2	—
Number of prosecutions, ...	—	—	—	—	—	—	—
<b>12. Offensive Trades.</b>							
Total number now on register, ...	3	15	42	—	9	69	70
Number of inspections, ...	13	77	1,000	—	46	1,136	1,155
Number of irregularities, ...	—	—	69	—	1	70	37
Number of prosecutions, ...	—	—	—	—	—	—	—
<b>13. Rag Flock Act, 1911.</b>							
Total number of visits, ...	85	30	32	—	—	147	93
Samples submitted for analysis, ...	24	8	7	—	—	39	30
Certified not to conform to standard, ...	—	—	—	—	—	—	—
Number of prosecutions, ...	—	—	—	—	—	—	—
Number of convictions, ...	—	—	—	—	—	—	—
<b>14. Brokers' Premises.</b>							
Total number of visits, ...	38	42	317	14	16	427	456
<b>15. Infectious Diseases.</b>							
Total number of visits, ...	21,521	23,444	19,950	25,641	16,602	107,158	129,800

TABLE XXIII.—*Continued.*(c) OPERATIONS OF SANITARY SECTION—*Continued*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
<b>16. Housing Acts.</b>						1930	1929
Total number of visits, ...	5,985	9,177	14,805	2,800	2,917	35,684	21,790
<b>17. Work of Female Inspectors.</b>							
Under the Glasgow Corporation (Police) Order, 1904—							
<b>(a) Verminous Children.</b>							
Number of visits to schools,	174	302	492	328	390	1,686	2,121
Number of children submitted for inspection, ...	3,628	4,176	14,068	4,699	7,679	34,250	39,271
Number of children found infested, ... ..	56	106	96	262	176	696	853
Number of children found infected, ... ..	345	1,143	1,116	149	693	3,446	3,667
Number of children found with fleas, ... ..	104	182	87	104	181	658	768
Number of children found dirty, ... ..	176	339	381	171	103	1,170	1,212
Number of written notices,	57	132	97	682	317	1,285	1,769
Number of children cleaned by Guardians, ... ..	527	1,639	1,908	642	1,279	5,995	6,216
Number of children cleaned by officers, ... ..	—	—	—	—	—	—	—
<b>(b) Homes of Verminous Children.</b>							
Number of houses inspected,	1,233	1,458	1,576	458	1,604	6,329	6,704
Number of houses in which lodgers were found, ...	29	17	13	4	54	117	294
Number of houses found dirty,	9	61	45	47	3	165	187
Number of houses with dirty bedding, ... ..	12	41	30	54	3	140	165
Number of written notices,	4	3	63	—	2	72	110
Number of re-inspections, ...	23	161	220	103	4	511	769
Number of houses found cleaned, ... ..	9	45	39	50	3	146	164
Number of bedding found cleaned, ... ..	11	32	25	52	3	123	144

TABLE XXIII.—*Continued.*(c) OPERATIONS OF SANITARY SECTION—*Continued.*

	Central.	Northern.	Eastern.	South-Eastern.	South-Western.	City.	
(c) House-to-House Visitation.						1930	1929
Number of houses visited first time, ... ..	26,371	8,721	10,570	3,667	5,408	54,737	65,974
Number of houses in which lodgers were found, ...	1,630	556	181	263	349	2,979	3,681
Number of houses found dirty,	152	327	291	126	39	935	1,045
Number of houses with dirty bedding, ... ..	83	71	57	59	20	290	319
Number of houses—Written notices, ... ..	17	27	202	3	34	283	304
Number of houses—Re-visits,	409	902	361	229	46	1,947	2,335
Number of houses found cleaned, ... ..	171	345	286	130	41	973	1,072
Number of houses—Bedding found cleaned, ... ..	94	75	56	55	26	306	302
(d) Re-housing Scheme Visitation.							
Number of houses visited first time, ... ..	1,303	11,731	9,669	3,703	732	27,138	23,691
Number of houses in which lodgers were found, ...	47	415	54	6	—	522	405
Number of houses found clean,	1,158	7,475	6,279	3,192	716	18,820	16,669
Number of houses found fair,	141	3,773	2,739	348	6	7,007	6,302
Number of houses found unsatisfactory, ... ..	4	445	539	115	6	1,109	672
Number of houses found dirty,	—	38	12	48	4	102	48
Number of houses with dirty bedding, ... ..	—	30	2	12	—	44	11
Number of written notices, ...	—	58	16	15	4	93	48
Number of re-visits, ...	—	1,012	616	338	1	1,967	1,440
Number of houses found cleaned, ... ..	—	469	568	186	1	1,224	724
Number of bedding found cleaned, ... ..	—	28	16	16	—	60	16
(e) Other Work.							
Number of nuisances reported by Female Inspectors, ...	2	56	446	193	27	724	334
Number of infectious disease cases reported by Female Inspectors, ... ..	—	1	3	3	—	7	4



TABLE XXIV.—GLASGOW.—POPULATION; BIRTHS AND DEATHS; BIRTH-RATES AND DEATH-RATES PER 1,000; ALSO DEATHS UNDER 1 YEAR, AND DEATH-RATES PER 1,000 BIRTHS SINCE 1860.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1860†	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	761,925	24,206	16,197	31·8	21·2	3,607	149
1902	762,789	24,722	15,532	32·4	20·4	3,206	129

\* Extended City.

† For earlier years, see Report for 1910, Table liii.

TABLE XXIV.—*Continued.*

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1903	763,654	25,135	15,073	32.9	19.7	3,663	146
1904	764,521	24,754	15,414	32.4	20.2	3,606	146
1905	765,389	24,316	14,460	31.8	18.9	3,195	131
1906	780,192*	24,560	14,889	31.5	19.1	3,223	131
1907	781,080	24,006	15,659	30.7	20.0	3,116	130
1908	781,969	23,915	15,265	30.6	19.5	3,284	137
1909	782,860	23,140	15,242	29.6	19.5	3,073	133
1910	783,785	22,222	13,395	28.4	17.1	2,694	121
1911	784,680	21,755	13,899	27.7	17.7	3,016	139
1912	785,600	22,044	13,797	28.1	17.6	2,740	124
1913†	1,021,789*	28,688	17,693	28.1	17.3	3,706	129
1914	1,028,440	29,462	17,522	28.6	17.0	3,913	133
1915	1,035,091	27,943	20,159	27.0	19.5	4,007	143
1916	1,041,742	27,094	16,601	26.0	15.9	2,996	111
1917	1,048,393	24,030	16,691	22.9	15.9	3,089	129
1918	1,055,044	23,524	18,362	22.3	17.4	2,660	113
1919	1,061,695	25,835	18,237	24.3	17.2	2,937	114
1920	1,068,346	32,626	16,765	31.5	15.7	3,477	107
1921	1,075,000	29,712	15,625	27.6	14.5	3,138	106
1922	1,074,607	28,298	17,850	26.3	16.6	3,401	120
1923	1,074,215	26,710	14,875	24.9	13.8	2,388	89
1924	1,073,822	25,330	16,868	23.6	15.7	3,005	119
1925	1,073,429	25,416	15,336	23.7	14.3	2,591	102
1926	1,090,380*	24,541	15,731	22.7	14.6	2,548	104
1927	1,089,988	23,578	15,439	21.6	14.2	2,527	107
1928	1,089,595	23,649	15,701	21.7	14.4	2,525	107
1929	1,089,202	22,799	17,760	20.9	16.3	2,438	107
1930	1,088,810	23,322	15,455	21.4	14.2	2,355	101

\* Extended City.

† Births and Deaths from 1913 are corrected for transfers.



**PART II**

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FEVER AND TUBERCULOSIS  
HOSPITALS AND SANATORIA

---

**ANNUAL REPORTS**

*FOR THE YEAR*

**1930**

## PART II

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### FEVER AND TUBERCULOSIS HOSPITALS.

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The chief feature of the year as regards hospital accommodation was the relatively high incidence of scarlet fever and the usual pressure on beds to which the winter prevalence of pneumonia gives rise. The hospital problems thus created are referred to in the sections on respiratory diseases, and on infectious diseases. For a period of the year a waiting list of pneumonia patients was again in evidence. The general hospitals transferred to the Department under the Local Government Act on 16th May were also utilised to the full, and, indeed, later in the year became overcrowded. The general administrative difficulties as regards the fever hospitals were dealt with in last year's report, and remain substantially the same.

*Belvidere Hospital.*—The new observation ward of two storeys was completed and occupied during the year, and proved of the very greatest value. Erected on the cubicle principle for 34 beds, it also contains a small operating theatre, a facility essential in a fever hospital of this size. It is becoming more and more realised that observation ward accommodation should approximate to one-third of the total beds, a proportion far from being reached in any of the Glasgow hospitals. The wooden pavilions which are now old and out of date will shortly require consideration from this point of view.

*Ruchill Hospital.*—Certain changes at the administrative block to provide more suitable office accommodation are under completion. The gateman's house has been converted into a waiting-room for patients' friends. Considerable overhaul of the electric wiring has been undertaken, and fire escape stairs fitted to the Nurses' Home.

*Shieldhall Hospital.*—In this old hospital the minimum repairs have been carried out. It was found advisable, however, to replace the gas lighting system by electric light.

*Bellefield Sanatorium.*—This institution has now been completed to its final accommodation of 102 beds. This total became available during the year. An X-ray plant has been installed.

*Knightswood Hospital.*—This hospital reached its final accommodation of 258 beds in 1929. During 1930 the recreation room for



nurses was added to, along with facilities for the training of nurses, which was formerly quite inadequate. This extension of the Nurses' Home is expected to be ready early next year.

*Mearnskirk Hospital.*—The whole accommodation (500 beds) of this institution became available during the year for the treatment of non-pulmonary tubercular and orthopædic conditions in children.

*Robroyston Hospital.*—One of the pavilions has been remodelled and was opened during the year for the treatment of puerperal fever and pyrexia. The reconstructed pavilion allows of separation of different types of patient, and provides about 40 beds at the maximum.

The General Hospitals transferred to the Corporation on 16th May, Stobhill Hospital, the Eastern and Western District Hospitals, and the acute wards of the Southern General Hospital, continued to function in their former manner. At Stobhill Hospital an extension of the maternity accommodation is under construction. This, along with a new admission block, will be ready next year. Arrangements are being made to transfer a ward of phthisis patients to other hospitals in order to increase the accommodation for mental observation cases. At the Western District Hospital arrangements have been made for the treatment of tonsils and adenoids in school children, in place of that at Shakespeare School. Twenty beds are being devoted to this purpose. At the Southern General Hospital an endeavour is being made to reduce the beds devoted to the hospital treatment of advanced pulmonary tuberculosis. The nursing staff is being amplified.

Various problems connected with general hospital accommodation are under consideration. The use made of these transferred institutions, the type of patient admitted, the staffing and other arrangements, will be further discussed in the light of experience, and will be fully dealt with in the report for next year.

*Annual Reports of Fever Hospitals.*—In former years the work of the fever hospitals was summarised in three tables. In order to reduce the amount of statistical work and to a certain extent the size of the report, the age and sex distribution of patients treated in all hospitals are this year combined, as there is probably little significance in these particulars in relation to the statistics of individual hospitals.

## GLASGOW.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES

			Age.	Enteric Fever.	Paratyphoid Fever.	Puerperal Fever.	Scarlet Fever.	Diph. and Mem. Group.	Erysipelas.	Cerebro-spinal Fever.	Continued Fever.	Typhus Fever.	Polio-encephalitis.	Poliomyelitis.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Malaria.
Cases (including Deaths).																	
Males,	...	...	- 1	—	—	—	28	24	6	19	—	—	2	—	248	3	—
"	...	...	- 2	—	1	—	91	71	4	8	—	1	—	4	245	6	—
"	...	...	- 3	—	2	—	129	78	5	—	—	—	—	1	115	4	—
"	...	...	- 4	—	1	—	179	106	4	2	—	—	—	1	86	—	—
"	...	...	- 5	—	—	—	181	104	2	5	—	1	—	—	67	1	—
"	...	...	-10	3	4	—	837	440	4	6	—	—	—	1	216	3	—
"	...	...	-15	3	4	—	274	136	7	3	—	—	—	1	116	1	—
"	...	...	-25	4	5	—	148	78	29	14	—	—	—	—	263	19	1
"	...	...	-35	7	1	—	47	19	30	1	—	—	—	—	141	20	—
"	...	...	-45	3	3	—	19	8	45	1	1	—	—	—	129	17	—
"	...	...	45+	6	1	—	5	7	168	—	—	2	—	—	181	29	—
Total,	...	...	...	26	22	1	1,938	1,071	304	59	1	4	2	8	1,807	103	1
Females,	...	...	- 1	—	1	—	15	23	9	17	—	—	—	1	196	2	—
"	...	...	- 2	—	1	—	79	45	4	4	—	—	—	1	224	3	—
"	...	...	- 3	1	—	—	115	78	1	4	—	—	1	1	105	3	—
"	...	...	- 4	1	2	—	191	113	1	5	—	—	—	1	55	—	—
"	...	...	- 5	—	2	—	225	133	—	6	—	—	—	1	60	—	—
"	...	...	-10	7	11	—	1,076	569	6	3	1	—	—	2	156	4	—
"	...	...	-15	3	8	—	408	199	14	6	—	—	1	—	46	3	—
"	...	...	-25	6	16	96	307	160	42	5	1	—	—	1	102	9	—
"	...	...	-35	2	12	211	98	57	50	1	—	—	—	—	66	7	—
"	...	...	-45	2	1	60	34	16	51	1	—	—	—	—	54	4	—
"	...	...	45+	2	2	—	11	11	154	—	—	—	—	—	98	12	—
Total,	...	...	...	24	56	367	2,559	1,404	332	52	2	—	2	8	1,162	47	—
Deaths.																	
Males,	...	...	- 1	—	—	—	5	3	3	14	—	—	2	—	91	1	—
"	...	...	- 2	—	—	—	3	12	—	6	—	1	—	—	69	—	—
"	...	...	- 3	—	—	—	2	10	1	—	—	—	—	—	10	2	—
"	...	...	- 4	—	—	—	3	7	—	1	—	—	—	1	9	—	—
"	...	...	- 5	—	—	—	1	5	—	4	—	—	—	—	5	—	—
"	...	...	-10	1	1	—	2	17	—	2	—	—	—	—	8	—	—
"	...	...	-15	1	—	—	1	4	—	3	—	—	—	1	—	—	—
"	...	...	-25	1	—	—	—	1	3	6	—	—	—	—	20	1	—
"	...	...	-35	—	—	—	—	—	1	—	—	—	—	—	17	3	—
"	...	...	-45	—	—	—	1	—	—	1	—	—	—	—	43	4	—
"	...	...	45+	1	—	—	—	2	25	—	—	1	—	—	81	12	—
Total,	...	...	...	4	1	—	18	61	33	37	—	2	2	2	353	23	—
Females,	...	...	- 1	—	—	—	5	6	3	12	—	—	—	—	56	2	—
"	...	...	- 2	—	—	—	5	8	2	3	—	—	—	—	43	—	—
"	...	...	- 3	—	—	—	3	6	—	3	—	—	—	—	11	—	—
"	...	...	- 4	1	—	—	2	8	—	4	—	—	—	—	3	—	—
"	...	...	- 5	—	—	—	—	13	—	3	—	—	—	—	4	—	—
"	...	...	-10	—	—	—	8	16	—	2	—	—	—	1	5	—	—
"	...	...	-15	1	—	—	1	3	—	2	—	—	—	—	2	—	—
"	...	...	-25	—	1	12	—	2	1	1	—	—	—	—	13	—	—
"	...	...	-35	1	—	27	—	1	6	—	—	—	—	—	13	1	—
"	...	...	-45	—	—	11	2	1	4	1	—	—	—	—	16	3	—
"	...	...	45+	—	—	—	—	—	12	—	—	—	—	—	41	4	—
Total,	...	...	...	3	1	50	26	64	28	31	—	—	—	1	207	10	—

## DISMISSED FROM FEVER HOSPITALS, AND DEATHS DURING THE YEAR 1930.

Dysentery.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-cough.	Chickenpox.	Mumps.	Influenza.	Veneral Diseases.	Babies with Mothers.	No apparent Disease.	Impetigo.	Others.	Ene. Lethargica.	Trachoma.	Beri-beri.	Unclassified.	Puerperal Pyrexia.	TOTALS.
6	—	2	110	2	58	13	—	—	—	17	3	—	88	—	—	—	—	—	629
8	1	5	174	1	54	14	—	—	—	—	3	—	48	—	—	—	—	—	739
3	—	3	95	1	28	10	—	—	—	—	2	1	31	—	—	—	—	—	508
5	1	—	76	—	34	5	—	—	—	1	1	1	19	—	—	—	—	—	521
—	1	3	43	—	19	10	1	—	—	—	2	—	16	—	—	—	—	—	456
3	2	7	76	1	27	24	1	4	—	—	8	1	81	—	—	—	—	—	1,749
—	—	3	3	—	—	5	1	1	—	—	—	—	36	1	—	—	—	—	595
—	8	5	7	—	—	1	—	6	53	—	—	—	67	—	2	—	2	—	659
3	2	—	3	—	—	—	—	1	105	—	2	1	48	—	1	5	—	—	332
4	—	1	1	—	—	1	—	2	40	—	2	—	31	1	—	—	—	—	269
2	7	—	2	—	—	—	—	1	36	—	2	—	51	1	—	—	—	—	465
34	22	29	590	5	220	83	3	15	234	17	25	4	516	3	3	5	2	—	7,156
4	—	—	87	—	57	6	—	—	—	9	5	1	69	—	—	—	—	—	502
7	—	5	167	—	76	8	—	—	—	—	3	3	48	—	—	—	—	—	678
3	—	5	116	—	45	15	—	—	—	—	2	1	26	—	—	—	—	—	522
—	—	5	56	—	23	6	—	—	—	—	2	—	27	—	—	—	—	—	488
1	—	5	46	—	24	11	—	—	—	—	3	—	20	—	—	—	—	—	537
3	—	18	67	3	23	25	—	—	—	—	6	—	73	2	1	—	—	—	2,056
2	3	8	2	—	1	2	—	—	—	—	3	—	41	—	1	—	—	—	751
4	6	6	80	4	1	2	5	3	—	—	3	—	83	—	1	—	26	3	972
2	11	1	20	4	—	2	—	—	—	—	—	—	66	1	—	—	5	1	617
2	2	1	1	—	—	1	—	—	—	—	—	—	31	—	—	—	—	2	263
—	—	1	—	—	—	—	—	1	—	—	—	—	44	1	—	—	1	—	338
28	22	55	642	11	250	78	5	4	—	9	27	5	528	4	3	—	32	6	7,724
2	—	2	27	—	24	1	—	—	—	4	—	—	11	—	—	—	—	—	190
1	1	5	43	—	18	2	—	—	—	—	—	—	5	—	—	—	—	—	166
—	—	3	9	—	5	—	—	—	—	—	—	1	4	—	—	—	—	—	47
—	1	—	4	—	5	—	—	—	—	—	—	—	1	—	—	—	—	—	32
—	—	3	2	—	3	—	—	—	—	—	—	—	1	—	—	—	—	—	24
—	—	6	1	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	42
—	—	2	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—	17
—	1	5	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	44
—	1	—	—	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—	27
—	—	1	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	54
—	3	—	—	—	—	—	—	—	—	—	—	—	16	1	—	—	—	—	142
3	7	27	86	—	55	3	—	—	—	4	—	1	62	1	—	—	—	—	785
1	—	—	29	—	23	1	—	—	—	2	—	—	13	—	—	—	—	—	153
—	—	5	33	—	27	1	—	—	—	—	—	—	6	—	—	—	—	—	133
1	—	5	15	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	51
—	—	5	2	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	28
—	—	5	2	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	30
—	—	16	1	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	51
—	—	6	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	18
—	—	4	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	38
—	1	1	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	53
—	—	1	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	43
—	—	1	—	—	—	—	—	—	—	—	—	—	6	—	—	—	—	—	64
2	1	49	82	—	65	2	—	—	—	2	—	—	38	—	—	—	—	—	662

# GLASGOW—TABLE SHOWING ALTERATIONS IN DIAGNOSIS OF CASES DISMISSED AND DEATHS DURING 1930

ORIGINALLY CERTIFIED AS

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Diagnosis altered to	Typhus Fever.	Enteric Fever.	Continued and Undefined Fever.	Puerperal Fever.	Scarlet Fever.	Scarlet Fever and Other Diseases.	Diphtheria.	Diphtheria and Other Diseases.	Erysipelas.	Cerebro-spinal Fever and Other Diseases.	Polymyositis.	Pneumonia and Other Diseases.	Pneumonia.	Influenza Pneumonia.	Dysentery.	Measles.	Measles and Other Diseases.	German Measles.	Whooping-cough.	Whooping-cough and Other Diseases.	Chickenpox.	Malaria.	Mumps.	Other Diseases.	Puerperal Pyrexia.	Leptospirosis.	Unclassified.	Paratyphoid B.	Infective Jaundice.
Typhus Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued and Undefined Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Polymyositis, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis (all forms), ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roseola, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-cough, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mumps, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Nervous System, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Respiratory System, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Circulatory System, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Digestive System, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Accidents and Diseases of Pregnancy and Parturition, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Skin and of the Cellular Tissue, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
No apparent Disease, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
All other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas and other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Polio-encephalitis, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping-cough and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paratyphoid B., ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Para. B. and Other Diseases, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute and Chronic Nephritis, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cancer, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diabetes Mellitis, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Impetigo, ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	45	28	44	304	5	344	2	63	173	1	8	7	455	19	17	38	12	7	13	1	27	1	2	7	3	8	2	8	2

*Altered Diagnoses*—The following table shows the alterations of diagnoses of cases treated in all the fever hospitals and reflects two main points:—(a) natural uncertainties which arise in connection with the correct diagnosis of disease unless under hospital observation; and (b) the necessity, in the patient's interest, of obtaining hospital treatment before an accurate diagnosis can be made.

ALTERED DIAGNOSIS OF PATIENTS ADMITTED TO FEVER HOSPITALS  
IN RELATION TO TOTAL CASES TREATED.

DISEASE.	Actual Number of Cases (verified)	Number of of Cases of Altered Diagnosis.	Cases admitted as suffering from other Diseases but proved to be.	Total Admissions (Nett) (=Col. 1 -Col. 3 +Col. 2).	Percentage wrong Diagnosis.
Enteric Fever, ...	50	45	7	88	51.1
Paratyphoid Fever, ...	78	7	8	77	9.1
Puerperal Fever, ...	367	44	2	409	10.7
Scarlet Fever, ...	4,497	262	70	4,689	5.6
Diphtheria, ...	2,475	307	10	2,772	11.1
Erysipelas, ...	636	67	2	701	9.6
Cerebro-spinal Fever, ...	111	173	9	275	62.9
Continued Fever, ...	3	28	—	31	90.3
Typhus Fever, ...	4	—	1	3	—
Polio-encephalitis, ...	4	—	3	1	—
Poliomyelitis, ...	16	8	6	18	44.4
Primary Pneumonia, ...	2,969	453	87	3,335	13.6
Influenzal Pneumonia, ...	150	19	—	169	11.2
Malaria, ...	1	1	—	2	50.0
Dysentery, ...	62	17	8	71	23.9
Tuberculosis (all forms), ...	128	—	125	3	—
Measles, ...	1,232	27	65	1,184	2.3
German Measles, ...	16	7	—	23	30.4
Whooping-cough, ...	470	13	30	453	2.9
Chickenpox, ...	161	27	2	186	14.5
Mumps, ...	8	2	1	9	22.2
Influenza, ...	19	—	18	1	—
Encephalitis Lethargica, ...	7	—	—	7	—
Trachoma, ...	6	—	—	6	—
Beri-beri, ...	5	—	—	5	—
Puerperal Pyrexia, ...	6	3	—	9	33.3
Unclassified, ...	34	2	—	36	5.6
No apparent disease, ...	52	—	50	2	—
Others, ...	1,044	—	109	935	—

With regard to enteric, paratyphoid, and continued fever, there is a good deal of difficulty in the recognition of these conditions. In individual cases the presence of the first two named is often strongly suspected, and the patient sharply ill. In hospital a full bacteriological examination can be made, and its true nature discovered. It would be unwise to insist upon complete accuracy before agreeing to admit the patient.

Much the same remarks apply to puerperal fever and puerperal pyrexia. Indeed the reason why the puerperal pyrexia regulations were made was to secure the earliest possible treatment of inflammatory conditions arising after childbirth. Consequently, suspected cases are readily admitted.



As regards scarlet fever, difficulties in diagnosis not unnaturally arise, especially in mild cases. While a severe case of tonsillitis may quite properly be sent to hospital before waiting for the result of bacteriological examination which proves it to be diphtheria.

Pneumonia is sometimes difficult to detect, especially in children. It often happens that, where a child is sharply ill and the home conditions are unsatisfactory, the medical practitioner may suspect the presence of pneumonia which is not confirmed in hospital.

The hospital bed accommodation for infectious diseases is shown in Table XX. in the Appendix, the second portion of which indicates the number of beds available in Corporation institutions and sanatoria, and the number of beds occupied by tuberculosis patients in other hospitals and sanatoria for which payment is made.

The usual information with regard to expenditure in Table XXI. is for the financial year ending 31st May, 1930.

### EAR, THROAT, AND NOSE DISEASES.

The following statement summarises the visits made to hospitals by the two specialists. Further details will be found in the various hospital reports :—

#### RECORD OF ATTENDANCES AND OPERATIONS BY AURISTS AT CORPORATION HOSPITALS FOR THE YEAR 1930.

	Patients.						Staff.		
	New Cases.		Old Cases.		Operations.		New Cases.	Old Cases.	Operations.
	Age - 5	+ 5	- 5	+ 5	- 5	+ 5			
Belvidere, ...	68	63	44	85	5	11	18	23	1
Shieldhall, ...	13	20	9	15	5	7	1	6	—
Robroyston, ...	2	1	—	—	4	13	1	1	2
Ruchill, ...	61	90	39	46	27	47	20	12	7
Knightswood,	13	34	2	9	9	27	—	—	—
Total, ...	157	208	94	155	50	105	40	42	10
Year 1929,	168	269	116	196	92	118	20	10	6

A large number of cases complicating fevers, especially scarlet fever, have been dealt with during the year under review. The importance of throat hygiene in preventing occurrences of ear complications has again been stressed. Several severe infections of the mastoid requiring operation have been dealt with by the conservative operation, which, while providing efficient drainage, aims at preserving the hearing as far as possible. In obstinate cases of otorrhœa removal of tonsils and adenoids has resulted in cessation of the discharge.

Several cases requiring radical mastoid and prolonged aural treatment have been dealt with at the throat and ear clinique of the general hospital. The importance of "following up" treatment of

cases after leaving the infectious diseases hospital has been shown by the satisfactory termination of these cases. A large number of cases of purulent rhinitis and sinusitis have been cleared by this method of "follow up" and the performance of tonsil and adenoid operation when required.

### RECEPTION HOUSES.

The accommodation at Baird Street Reception House was utilised wholly during the year for the treatment of cases of ophthalmia neonatorum and artificial light therapy of tuberculosis. The former is dealt with in Section III. of the report, and the latter under "Tuberculosis."

The rear annexe of South York Street Reception House continued to be utilised for the isolation of young children prior to admission to the various country homes. Cases of scabies to the number of 58 and 15 verminous persons were also treated.

#### CONTACTS, &C., ADMITTED TO SOUTH YORK STREET RECEPTION HOUSE.

	1929		1930		
	Total.		Adults.	Children.	Total.
Smallpox Contacts, ... ..	69		35	—	35
Enteric Fever, ,, ... ..	3		—	1	1
Scarlet Fever, ,, ... ..	1		—	3	3
Diphtheria ,, ... ..	1		2	6	8
Itch 1, Chickenpox 1, Post-pneumonia 1, Bronchitis and Enteritis 1, Urticaria 1, Chilblains 1, ... ..	—		1	6	7
Dysentery Contacts, ... ..	4		—	—	—
Enteric and Measles Contacts, ... ..	2		—	1	1
Impetigo, ... ..	14		—	18	18
Verminous Persons, ... ..	46		14	1	15
Scabies, ... ..	57		12	46	58
For Observation before admission to Country Homes, ... ..	122		—	151	151
Trachoma, ... ..	2		—	—	—
Cancerum Oris ... ..	1		—	—	—
House being fumigated, ... ..	8		7	18	25
Typhus Fever Contacts, ... ..	—		6	7	13
Total, ... ..	330		77	258	335

## BELVIDERE FEVER HOSPITAL.

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During the year 1930, 6,304 patients were treated to a conclusion. There remained in hospital from the previous year 615 patients, and the admissions numbered 6,299. This figure exceeds the admissions for the previous year by 605, and is considerably in excess of the average. There were 580 deaths, equivalent to a mortality rate of 9·2 per cent., as contrasted with 13 per cent. in 1929 and 12·8 per cent. in 1928. The average duration of residence of patients who recovered was 38 days; in fatal cases 12 days.

The scarlet fever admissions numbered 1,981, an excess of 545 over the figure for 1929. Diphtheria also was more prevalent, and 1,179 cases were admitted, compared with 887 in the previous year. In scarlet fever the mortality rate was 0·8 per cent., and in diphtheria 4·8 per cent., and these relatively low rates contributed to the greatly reduced general mortality rate. The admissions for pneumonia, 1,164, were fewer than in 1929 or 1928, and the mortality rate was slightly reduced. Measles was prevalent in the first quarter of the year, and 347 cases were admitted. The disease was of severe type, and many of the cases were admitted late with grave complications already present.

Difficulty has again been experienced in providing the necessary isolation accommodation for mixed infections and for the observation of doubtful cases, but at the end of the year the new two-storey observation pavilion was practically completed, and was opened for the reception of patients in January, 1931. In future, therefore, the situation will be materially eased, although the number of beds available for observation and special isolation—68 in all—is still considerably short of the ideal.

*Condition of Patients on Admission in relation to Mortality Rate.*—One hundred and forty-nine, or almost 26 per cent. of the total deaths, occurred with 48 hours of admission to hospital. Of these, 69 were cases of pneumonia; the distribution of the others was as follows:—diphtheria 29, measles 9, whooping-cough 8, puerperal sepsis 9, cerebro-spinal fever 5, scarlet fever 1, tuberculosis 4, and others 15.

*Physical Condition.*—The physical condition of the young children admitted has not appreciably altered during the last three years, except perhaps for the steadily diminishing incidence of rickets. Enteritis and varying degrees of anæmia were commonly present. The general standard of cleanliness was disappointing and still left much to be desired. Dirt and septic sores were very frequently present, but verminous patients were fewer.

*Scarlet Fever.*—Mention has already been made of the increased incidence of scarlet fever. One thousand nine hundred and sixty-seven cases were treated to a conclusion ; of these, 16 died. The mortality rate was 0·8 per cent., which is the same as for the two previous years. Of the 16 deaths, strictly speaking only eight were directly attributable to scarlet fever, which is equivalent to a mortality rate of 0·4 per cent. Of the eight fatal cases, one was due to toxic scarlet fever, three to septic scarlet fever, three to scarlet fever and nephritis, and one to streptococcal meningitis. The remaining eight fatalities occurring during the course of scarlet fever were attributable thus :—pneumonia 5, erysipelas 1, bronchitis and enteritis 1, and acute myocarditis 1. On the whole the disease was of rather more severe type than in the previous year, especially in the last quarter, when a number of septic cases were dealt with. Serum was administered in all but the mild cases, and in some instances larger doses were employed than hitherto. The intravenous route was adopted in the severest examples. A considerable number of the patients were discharged on the expiry of four weeks from the commencement of illness ; the majority in their fifth week. Patients with nasal, aural, or other discharges were, as a rule, detained until the condition had cleared up. Complications, particularly rhinitis, otitis, nephritis, and adenitis, were relatively frequent, and their incidence was greater than in the previous year. In persistent rhinitis a solution of Gentian-Violet applied locally was found beneficial, and in some severe cases of nephritis, autohæmotherapy yielded encouraging results.

Apart from a number of cases which on admission were found to be suffering coincidently from another infection, 16 scarlet fever patients were admitted in the incubation stage of other diseases. Six were incubating measles, 5 whooping-cough, and 5 chickenpox. The actual admissions with mixed infections were as follows :—

Scarlet fever and diphtheria, ...	...	...	...	46
" " " chickenpox, ...	...	...	...	6
" " " measles, ...	...	...	...	3
" " " whooping-cough, ...	...	...	...	1
" " " enteric fever, ...	...	...	...	1
" " " erysipelas, ...	...	...	...	1

*Diphtheria.*—As already stated, diphtheria showed a considerable increase. One thousand one hundred and seventy-seven patients were treated to a conclusion ; of these 56 died. The mortality rate was 4·8 per cent., considerably lower than in the two previous years. During the early part of the year many severe cases with extensive local lesions were met with, and large doses of serum were employed intramuscularly and intravenously. The maximum dose given was 130,000 units. Of the 56 fatal cases, 29 were moribund on admission.

Fewer mixed infections were encountered, but five patients were found to be suffering coincidently from measles, one from erysipelas, and one from whooping-cough. Three were admitted while incubating scarlet fever, four while incubating measles, one incubating chicken-



pox, and one incubating whooping-cough. A large number of cases were erroneously certified. These were, for the most part, septic throat conditions in older patients, and early bronchial pneumonias in children.

*Schick and Dick Tests.*—Probationer nurses joining the staff were subjected to the Schick Test, and those who gave positive reactions were immunised. Among 48 probationer nurses tested there were 10 positive reactors. For reasons stated in previous reports, the Dick Test was not pursued among the staff, but in patients it was used to a considerable extent as an aid to diagnosis in doubtful cases. In this connection the Schultz-Charlton reaction was also helpful.

*Pneumonia.*—Only 1,111 cases were treated, compared with 1,572 in the previous year. This diminution, however, was due not so much to lessened incidence as to the fact that the large increase in scarlet fever and diphtheria took up accommodation which in the previous year was available for pneumonia. Two hundred and thirty-eight deaths occurred, but 69 of these patients were moribund on admission. The mortality rate was 21·4 per cent., excluding the moribund cases, 16 per cent. The following table shows the mortality rates, together with the cases moribund on admission, in the various age groups :—

	-1	-2	-3	-4	-5	-10	-15	-25	-35	-45	+45	Total.
Total treated, ...	149	136	73	32	41	151	66	151	99	82	131	1,111
Total deaths, ...	57	38	8	3	3	5	1	14	20	31	58	238
Mortality rate, ...	38·3	27·9	11·0	9·4	7·3	3·3	1·5	9·3	20·2	37·8	44·3	21·4

In conjunction with the Glasgow Royal Infirmary a study of a series of cases, with special reference to the relation of the type of infecting organism to the clinical course was carried out by Dr. Montgomery, who has submitted the following summary of his work.

The causal organism and its type in relation to the clinical manifestations were investigated in considerable detail. A study was made of the sputum, the blood, and, in some cases, the lung juice obtained by puncture. The organism obtained from these sources was typed, and each case was followed up during the course of the illness and also after the discharge of the patient, examinations of the sputum and blood being carried out regularly. This part of the work was directed towards elucidating the "carrier" problem, but no definite findings can yet be stated, as the investigation is still in progress.

In the majority of cases the infecting organism was found to persist throughout the illness. In a small number it persisted after the patient's recovery for as long as a year, and these apparent carriers are still under observation.

Isolation of the organism from blood culture was possible in 25 per cent. of the series. The mortality rate in such cases was high—36·8 per cent. Routine lung puncture was not practised for the following reasons :—(1) To a patient acutely ill it may cause distress sufficient to turn the balance against him; (2) in an early case of



pneumonia it is not always possible to delimit the patch of consolidation or to gauge its distance from the surface; (3) culture of the infecting organism by this method was only occasionally successful.

The epidemiological aspect of pneumonia was also considered, but at present the enquiry is not sufficiently advanced to permit of any conclusions.

Of the total 1,111 admissions, 640 consecutive examples of pneumonia were investigated in two groups. (A) In 241 male adult cases the infecting organism was typed. One hundred and twenty-nine of these were examined in minute clinical detail daily during their residence and intensive treatment was carried out. (B) A series of 399 examples of Pneumonia in children was treated by intensive methods, but no systematic typing was done.

In Section "A" the patients were all adults with the exception of a few boys. They all showed definite evidence of pneumonia. On admission the sputa were obtained and investigated. In 129 blood was also removed for blood culture and the Wasserman reaction. In this series of 129 the daily clinical examination was extensive and thorough, and exact records were made of the onset of symptoms and complications. This was continued for three days after crisis.

Treatment was commenced immediately on admission. Symptomatic, dietetic, and empirical methods were followed, with the exhibition of various proprietary drugs, such as S.U.P. 36, Salvochin, Pneumococcus Immunogen, and Edwenil. By means of symptomatic treatment the course of illness was made as easy as possible. Sleep was ensured every night by means of omnopon; large doses used when necessary. Pain was treated by poultices, ice-bags, antiphlogistine, and sometimes by omnopon, where it was persistent. Dyspnoea and cyanosis were treated with oxygen, and oxygen and carbon dioxide in combination. The nasal catheter and Haldane's apparatus were the methods used. The latter was more efficacious, although prolonged application was apt to be irksome. In some cases oxygen was given subcutaneously without appreciable benefit. Digitalis was used as a routine measure. Careful note was kept of variations in blood pressure, and the opinion was formed that records of such variations may be of great value in prognosis. Of the proprietary preparations, S.U.P. 36 was used most extensively. It was apparent that, in the majority of adults, there was considerable amelioration of discomfort, with a progressive improvement. The temperature, pulse, and respirations rates fell, and the output of urine increased.

In Section "B" the patients were all children, ranging in age from six weeks to five years, and all had definite pneumonia, either lobular or lobar in type. Only the more acutely ill were given S.U.P. 36 and oxygen. A large number of the gravely ill children had enteritis, and this rapidly yielded to the treatment. The improvement was one of the marked features. In babies, oxygen was given solely by nasal catheter, and it was usually necessary to adopt some form of restraint to prevent the removal of the catheter. The cases so treated showed great improvement. The dyspnoea rapidly subsided, but the toxic

aspect cleared rather more slowly. The following figures illustrate the results obtained :—

Total number of cases under survey,	...	640	
Total number of deaths,	... ..	108	= 16.8 per cent.
Number of cases typed and treated intensively,			
but without serum,	... ..	241	
Number of deaths,	... ..	38	= 15.7 per cent.
Number of cases in young children,	... ..	399	
Number of deaths,	... ..	70	= 17.5 per cent.
Number of cases treated with S.U.P. 36,	... ..	126	
Number of deaths,	... ..	15	= 11.9 per cent.

Two hundred and forty-one cases were typed with the following results :—

Type	I.—Pneumococcus	36.09 per cent.	Mortality rate,	12.6 per cent.
“	II.	36.51	“	19.3
“	III.	3.32	“	25.0
“	IV.	24.07	“	14.5

#### COMPLICATIONS.

A record of the complications in adults was tabulated.

*Cardiac Failure* was the most frequent. It was judged to be present when the pulse rate rose progressively, the heart dullness increased, and the urinary output remained stationary or fell. Thirty-eight cases showed these signs and 17 of them died.

*Pneumonia Migrans* was the next most frequent. Sixteen cases showed progressive involvement. In some only one lobe, in others each lobe in turn became consolidated. The course of such migratory extensions was usually much less severe than the initial involvement.

*Pleurisy*.—Apart from early pleurisy, dry pleurisy was noted in 10 cases during convalescence, and one case developed pleurisy with effusion.

*Endocarditis* was found in six cases, and all but one recovered.

*Tuberculosis*.—Four cases who exhibited definite clinical lobar pneumonia, and whose sputa yielded pneumococci, later developed the clinical signs of pulmonary tuberculosis. The diagnosis was confirmed by X-ray examination and the finding of B. tuberculosis in the spit.

*Empyema*.—There were four such cases. These had rib resection performed under local anaesthesia and recovered. Abscess of the lung recurred in one case.

*Tonsillitis*.—Seven cases of follicular type were noted during convalescence.

*Enteritis* was present in three cases (Widal negative).

*Laryngitis* also occurred in three cases.

*Furunculosis*.—Three examples of this condition occurred during convalescence.

*Hiccough* was a frequent complication and was persistent in three cases, one of which was fatal.

*Pneumococcal arthritis* was present in two cases. One was of suppurative type. Both recovered.

*Pneumococcal Peritonitis*.—There was one example of this fatal complication.

*Myositis*.—Two cases occurred. In both the thigh muscles were affected. In one case suppuration necessitating incision and drainage occurred.

*Thrombosis* of the great saphenous vein of the leg was noted in two cases.

*Meningismus* was present in one case. Opisthotonos and Kernig's sign persisted throughout the acute course, and, to a lesser degree, for two days after crisis.

*Measles*.—Three hundred and ninety-nine cases of measles were dealt with, and nearly all of them were cases in which grave complications were already present on admission. Seventy deaths occurred, giving the very high mortality rate of 17·5 per cent. The disease was of severe type, particularly in the first quarter of the year. Nine of the patients were moribund on admission. The great majority of the admissions were very young children, and many were received in the post rash stage with extensive bronchial pneumonia and often enteritis already present. Convalescent serum was available only in very limited quantity and was wholly used for the protection of children exposed to measles infection. Even had it been available in bulk, it is questionable whether its exhibition would have influenced the high mortality, as most of the cases were received at too late a stage to derive benefit.

*Enteric Group*.—During the year only female enteric group patients were treated in Belvidere. There was a considerable increase in the certifications, and 74 verified cases were treated to a conclusion. Forty-seven of them were examples of paratyphosus B., and 27 true typhosus infections. Five deaths occurred, equivalent to a mortality rate of 6·8 per cent. over all. In the paratyphoid group the mortality rate was 2·1 per cent., among B. typhosus infections 14·8 per cent.

*Dysentery*.—Twenty-one cases of dysentery, mostly bacillary, were dealt with, with one fatality. One case of amoebic dysentery was treated with Yatren 105 with good result.

*Whooping-cough*.—Two hundred and one cases were treated, mostly admitted on account of their severity or because of the presence of bronchial pneumonia. Fifty-five of these died, giving a mortality rate of 27·3 per cent. Calcium sodium lactate was extensively prescribed and yielded definitely favourable results in about half the

patients so treated. A group of cases complicated with convulsions received collosol calcium intravenously. It appeared to diminish the number and severity of the convulsions.

*Cerebro-spinal Fever.*—Only 42 verified cases were dealt with, as compared with 80 in the previous year. There were 20 deaths, equivalent to a mortality rate of 47·6 per cent., which, considering the low age incidence of the patients treated, may be regarded as very favourable. Erroneous certifications were again very numerous.

*Chickenpox.*—The number of cases was 158, a considerable number of these being sent to hospital because of the presence of other co-incident conditions. There were no deaths from chickenpox, but fatalities occurred in the group—one from acute miliary tuberculosis, one from enteritis and pneumonia, one from enteritis and bronchitis, one from pneumonia, and one from cellulitis of face and scalp. Three of the admissions were incubating measles.

*Puerperal Fever.*—Reference is made in another section of the report to some special work in this department, but for the sake of continuity a statistical summary has again been drawn up. In October a pavilion for this disease was made available at Robroyston and one of the two pavilions hitherto retained at Belvidere closed down. In spite of this, the number of cases treated was in excess of that of the previous year. Of the 406 patients treated, 363 were verified as puerperal sepsis.

The following tables are produced on the lines of previous reports and may be useful for comparison :—

<i>Confirmed Cases, 363.</i>						<i>Fatal Cases.</i>	
<i>Age Distribution—</i>							
Under 20 years,	...	...	...	...	20	...	2
20 and under 25,	...	...	...	...	81	...	10
25 " " 30,	...	...	...	...	107	...	9
30 " " 35,	...	...	...	...	90	...	14
35 " " 40,	...	...	...	...	48	...	8
40 " " 45,	...	...	...	...	16	...	3
45 " " 50,	...	...	...	...	1	...	—
					363		46
<i>Duration of Pregnancy—</i>							
Full time,	...	...	...	...	270	...	35
Premature labour,	...	...	...	...	18	...	3
Miscarriage,	...	...	...	...	5	...	2
Abortion,	...	...	...	...	70	...	6
<i>Sex Incidence—</i>							
Males,	...	...	...	...	141		
Females,	...	...	...	...	158		
Multiple Births,	...	...	...	...	10	(in each case twins)	
<i>Marriage—</i>							
Married,	...	...	...	...	345		
Single,	...	...	...	...	18		
Percentage of illegitimate births,	...	...	...	...	4·9		

*State at Birth—*

Alive, ... ..	285	...	Fatal Cases.	35
Dead, ... ..	14	...		3

*Type of Labour in Full-time Cases—*

Natural birth, ... ..	199	...	22
Natural birth, with chloroform, ... ..	7	...	2
Instrumental birth, with chloroform, ... ..	74	...	12
Breech birth, ... ..	19	...	1
Cæsarean section, ... ..	1	...	—
Failed forceps followed by natural birth, ... ..	2	...	1

*Attendance at Birth or Abortion—*

Doctor, ... ..	47	...	8
Midwife, ... ..	117	...	10
Doctor and nurse, ... ..	109	...	19
No attendant, ... ..	62	...	7
Delivery in maternity homes or hospitals, ... ..	22	...	2
Attended in Belvidere, ... ..	5	...	—
Doctor called in after birth, ... ..	1	...	—

*Condition of Placenta—*

Whole, ... ..	272	...	36
Broken, ... ..	80	...	8
Removed manually, ... ..	11	...	2

*Pyrexia.*

<i>Pyrexia.</i>	Number of Days.													
	1	2	3	4	5	6	7	8	9	10	14	21	21	
	Number of Cases.													
Onset of Fever after Birth, ... ..	30	46	51	31	25	12	16	11	11	8	17	32	23	
Days febrile before admission, ... ..	106	47	62	31	20	10	10	5	3	1	7	9	4	
Duration of primary fever in hospital, ... ..	34	35	50	46	26	12	16	18	10	18	27	22	27	
Fever on day of confinement, ... ..											44			
Fever one day before confinement, ... ..											4			
Fever two days before confinement, ... ..											1			
Fever three days before confinement, ... ..											1			
Admitted on first day of fever, ... ..											48			
Cases with no fever after admission, ... ..											22			

*Previous Obstetric History—*

	Single	Multiple
Previous abortion, ... ..	23	13
Difficult labour, ... ..	46	6

*Lesions Found—*

Perineal Tears—	All Cases.	Fatal Cases.
Complete, ... ..	2	—
Incomplete, ... ..	65	7
Vaginal Tears, ... ..	48	4
Cervical Tears, ... ..	82	7
Retained Products—		
Full-time Births, ... ..	14	1
Abortions, ... ..	39	3
Subinvolution of Uterus, ... ..	107	6
Septic Endometritis, ... ..	128	20
Septicæmia, ... ..	37	31
Salpingitis—		
Unilateral, ... ..	22	1
Bilateral, ... ..	4	—



<i>Lesions Found—</i>	All Cases.	Fatal Cases.
Pelvic Cellulitis, ... ..	76	9
Pelvic Peritonitis, ... ..	21	4
Pelvic Abscess, ... ..	5	—
Generalised Peritonitis, ... ..	17	16
Displacements of Uterus—		
Retroflexion, ... ..	3	—
Anteflexion, ... ..	7	—
Vaginitis and Cervicitis, purulent, ... ..	16	—
Ovarian Cyst, ... ..	1	—
Hydatid Mole, ... ..	1	1
Lobar Pneumonia, ... ..	3	1
Broncho-pneumonia, ... ..	9	7
Bronchitis, ... ..	11	1
Pleurisy, ... ..	1	—
Pulmonary infarction, ... ..	6	3
Influenza, ... ..	1	—
Endocarditis, bacterial, ... ..	1	1
Myocarditis, ... ..	1	1
Rheumatism, ... ..	2	—
Arthritis, septic, ... ..	2	2
Nephritis, ... ..	4	—
Cystitis, ... ..	1	—
Pyelitis, ... ..	6	—
Phlegmasia Alba Dolens—		
Unilateral, ... ..	15	2
Bilateral, ... ..	5	2
Phlebitis, ... ..	16	5
Acute Mastitis—		
Unilateral, ... ..	11	—
Bilateral, ... ..	6	—
Pyæmia, ... ..	6	5
Abscesses, various situations, ... ..	3	—
Anæmia, ... ..	22	3
Puerperal Insanity, ... ..	9	1
Cerebral Embolism, ... ..	1	1
Erysipelas, ... ..	2	—
Otitis Media, ... ..	1	—

*Bacteriological Findings—*

<i>Organisms cultured from Cervical Smears.</i>	Fatal Cases.
Streptococci, ... ..	67
Staphylococci, ... ..	59
Pneumococci, ... ..	25
Bacillus Coli, ... ..	60
Streptococci and Staphylococci, ... ..	13
Streptococci and B. Coli, ... ..	21
Streptococci and Pneumococci, ... ..	2
Staphylococci and Pneumococci, ... ..	5
Staphylococci and B. Coli, ... ..	13
Pneumococci and B. Coli, ... ..	14
Streptococci, Staphylococci, and B. Coli, ... ..	7
Streptococci, Pneumococci, and B. Coli, ... ..	1
Streptococci, Staphylococci, B. Coli, and Pneumococci, ... ..	1
Gonococci, ... ..	2
Staphylococci, B. Coli, and Pneumococci, ... ..	1
Streptococci and Diphtheroids, ... ..	1
B. Coli and Gram +ve Diplococci, ... ..	2
B. Coli and Diphtheroids, ... ..	1
Diphtheroids, ... ..	3
No Smear nor Growth obtained, ... ..	65

*Bacteriological Findings—**Organisms obtained by Blood Culture.*

					Fatal Cases.
Hæmolytic Streptococci, ... ..	23	...	...	...	21
Staphylococcus Aureus, ... ..	2	...	...	...	—
Pneumococci, ... ..	2	...	...	...	—
Bacillus Coli, ... ..	2	...	...	...	1
No Growth obtained, ... ..	76	...	...	...	14
Pneumococci and Streptococci, ... ..	1	...	...	...	1

*Treatment.*

Glycerine—					
Number of Women treated, ... ..	...	...	...	...	169
Number of Injections, ... ..	...	...	...	...	590
Serum—					
Number of Cases, ... ..	...	...	...	...	173
Intramuscular Injections, ... ..	...	...	...	...	162
Intravenous „ ... ..	...	...	...	...	30
Radiostoleum—					
Number of Cases treated, ... ..	...	...	...	...	55
Sulpharsenol—					
Number of Cases treated, ... ..	...	...	...	...	5 M.A.B. 1
Mercurochrome—					
Number of Cases treated, ... ..	...	...	...	...	5
Ergot and Quinine—					
Number of Cases treated, ... ..	...	...	...	...	46

*Operation.*

Mammary Abscess, incised, ... ..	...	...	...	...	19
Abscess elsewhere incised, ... ..	...	...	...	...	3
Pelvic Abscess incised, ... ..	...	...	...	...	5
Laparotomy, ... ..	...	...	...	...	1

*Consultation.*

Visiting Surgeon, ... ..	...	...	...	...	5 visits
Visiting Aurist, ... ..	...	...	...	...	1 visit.

*Venereal Disease.*—During the year, 234 patients were treated and discharged. This number is a slight increase on the previous year, when the figure was 229. There were no deaths. Twenty-four beds are available, and these were fully occupied throughout the year. The cases were classified as follows :—

	Year, 1930	Year, 1929
Syphilis (all stages) ... ..	49	47
Gonorrhœa, ... ..	120	145
Soft or Non-syphilitic Chancre, ... ..	43	20
Balanitis, ... ..	7	7
Venereal Warts, ... ..	1	5
Syphilis and Gonorrhœa, ... ..	8	4
Syphilis and Soft Chancre, ... ..	6	1
	<hr/> 234	<hr/> 229

The syphilitic cases represented all stages of the disease, and were further classified as follows :—

	Year, 1930	Year, 1929
Primary, ... ..	21	9
Secondary, ... ..	8	14
Tertiary, ... ..	10	16
Neuro-syphilis, ... ..	10	8
	<hr/> 49	<hr/> 47

In the gonorrhœal group the patients were admitted on account of the presence of some complication, which rendered them unsuitable for outdoor treatment. The complications were as follows :—

Epididymitis, ... ..	61
Prostatitis, ... ..	24
Arthritis, ... ..	10
Stricture, ... ..	7
Peri-urethral Abscess, ... ..	3
Cowperitis, ... ..	15
Cystitis, ... ..	
Posterior Urethritis, &c., ... ..	
	<hr/> 120 <hr/>

The age incidence among all patients was as follows :—

	Year. 1930	Year. 1929
15 and under 25, ... ..	53	59
25 „ „ 35, ... ..	105	87
35 „ „ 45, ... ..	40	43
45 and over, ... ..	36	40
	<hr/> 234 <hr/>	<hr/> 229 <hr/>

The following figures indicate the outdoor treatment centres from which the patients were recommended :—

Black Street Centre, ... ..	101
Broomielaw Centre, ... ..	52
Bellahouston Centre, ... ..	19
Western Infirmary, ... ..	13
Sanitary Chambers, and other sources, ... ..	49
	<hr/> 234 <hr/>

Eight patients were admitted suffering from complications resulting directly from anti-syphilitic treatment. After a lengthy stay in hospital these patients made a complete recovery. No complications arose from anti-syphilitic treatment in the ward during the year.

Arsenical Jaundice, ... ..	3
Arsenical Dermatitis, ... ..	4
Dermatitis and Jaundice, ... ..	1
	<hr/> 8 <hr/>

The average daily residence of all patients was 32 days.

THOMAS ARCHIBALD,  
*Physician-Superintendent.*

30th May, 1931.



RUCHILL FEVER AND TUBERCULOSIS HOSPITAL.

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The total number of cases treated in the hospital during the year 1930 was 5,347, and this exceeded that of the previous year by 519. There was a great increase in scarlet fever and measles, and many of the other diseases showed increases also, but the total was greatly reduced by a marked falling off in the numbers of pneumonia patients treated. The general mortality rate showed a fall to a figure which is more in accordance with the usual experience, namely, 10.2 per cent., as compared with 12.2 per cent. last year. This may be largely accounted for by the lesser number of pneumonia cases.

One case of typhus fever was dealt with. It occurred in a man who was sent into hospital as a case of pneumonia. The disease was present in fairly typical form and proved fatal.

The number of enterica cases showed a marked increase, there being 21 cases of typhosus and 13 cases of paratyphosus B. infection, compared with 8 and 3 respectively last year. The cases generally were of a mild type, there being no fatalities among the paratyphoids, and only two deaths from typhosus infection. In connection with these infections an interesting case was met with in an infant sent into hospital as a case of pneumonia. The patient was found to have meningitis, and on bacteriological examination of the cerebro-spinal fluid the infecting organism was proved to be paratyphosus B. Recorded instances of meningitis due to this organism are extremely few.

There were three cases of puerperal fever, all of which died. The patients were all admitted as cases of pneumonia occurring during the puerperium.

Scarlet fever cases showed a very striking increase in numbers, there being 1,533 compared with 956 the previous year. Another noteworthy point was an unusual prevalence during the summer months. The cases were generally of a mild type, and the mortality rate was the same as the previous year, namely, 1.3 per cent. Once more it must be recorded that considerable benefit was noted in the use of scarlatinal anti-toxin in the more severe cases.

There was an increase in the number of diphtheria cases treated, the figure being 744 as compared with 658. The type of disease showed nothing of any note, though there was a slight increase in the mortality rate, namely, 5.5 per cent. as compared with 5.0 per cent. last year.

There were 623 cases of erysipelas, as compared with 580 last year. This increase has been very striking and has been progressive, last year's figure being about 100 in excess of the year previous. The mortality rate was slightly greater, 9.3 per cent., as compared with 8.8 per cent. As is usual, the majority of cases were of the facial type.



Treatment by means of intravenous injection of anti-streptococcic serum of the anti-scarlatinal variety has been continued with encouraging results.

Cerebro-spinal fever cases were about the same in number, but the mortality rate, though high, was somewhat less, 71.9 per cent. compared with 75 per cent. The cases were of the ordinary type, and, as before, the occurrence of rashes was very rare.

No trachoma cases have been treated this year, as arrangements were made for them to go elsewhere owing to the pressure on the hospital accommodation.

Encephalitis lethargica cases were slightly more in number, but still remained few, only six being dealt with. Three cases of poli-encephalitis were admitted during the year, and all proved fatal. They all presented obscure cerebral symptoms with some abnormalities in the character of the cerebro-spinal fluid. The diagnosis in each case was confirmed by pathological examination.

Acute poliomyelitis was less prevalent, only five cases being treated as compared with 14 during 1929. In all the cases the paralytic stage was well established on admission, and nothing of note falls to be recorded regarding them.

Pneumonia showed a very striking falling off in numbers, there being only 813 as compared with 1,300 last year. This was due partly to a lessened incidence of the disease in the city, and partly to increased facilities being provided for treatment of cases in other institutions. The mortality rate was slightly higher, but there was no reason to regard the cases as other than ordinary infections. One notable feature was present, namely, a somewhat high incidence of cases complicated by empyema. These cases on the whole did well, and the fatalities were comparatively few. The cases of influenzal pneumonia were markedly decreased, only totalling 38, or one-third of those of last year.

Bacillary dysentery showed an increase over last year (37 as compared with 21), and though the majority occurred in infants, there was a distinct increase in the older patients. The mortality was increased from 5 per cent. to 8 per cent.

Cases of tubercular infection dealt with in the fever hospital were somewhat increased, and, as usual, the majority consisted of cases of tubercular meningitis sent into hospital as one of the other notifiable nervous diseases.

The indication at the close of last year that a measles epidemic was commencing, was fully borne out as a total of 583 cases were treated in the current year. This is an increase of almost 400 on last year's figures. The mortality rate was raised, as is the usual experience in hospital during epidemic periods, owing to the grave cases which are selected for hospital treatment.

Cross infection by this disease was common, though undoubtedly the introduction of the system of careful enquiry regarding contact with other diseases before admission to hospital prevented many

instances of cross infection. Convalescent patients' serum was made use of to a large extent to immunise susceptible contacts in the crossed wards, and though, as was the experience last year, complete success was not universal, the results were, on the whole, satisfactory.

Six cases of beri-beri in lascars were admitted from a boat in the harbour. They were all of a very mild nature, and all made good recoveries.

The visiting aural surgeon's advice and assistance was again made much use of. He attended in all 236 patients, of which 151 were new cases seen for the first time. The conditions dealt with included otitis media, enlarged tonsils, adenoids, mastoid disease, rhinitis, laryngitis, antrum disease, septal disease, and many others. Operations to the number of 74 were performed, of which the majority were for the removal of tonsils and adenoids in cases of persistent aural and nasal discharge.

Dr. H. Baxter, Medical Officer in charge of the Tuberculosis Section of the hospital, presents the following report on the work carried out in that department :—

"During the year 1930 the number of patients treated in the Tuberculosis Section of the hospital was slightly less than in 1929, but greater than in 1928. The total number of dismissals and deaths together amounted to 697, compared to 710 in the previous year, while the proportion of deaths to the total number of cases treated was 24 per cent., compared with 29 per cent. in 1929. This apparent fall in the death-rate must be correlated with the fall in the numbers of advanced cases (261 as compared with 329 in 1929), and the increase in the numbers of early and intermediate cases.

"The early cases of tuberculosis admitted for treatment remain relatively few in number, but almost all derived obvious and immediate benefit from sanatorium treatment.

"The intermediate group is comprised mostly of chronic cases with failing general resistance, and in this group are found the difficult types of patients who, for various reasons, leave hospital prior to attaining the standard of convalescence and general health required for medical discharge.

"The average stay of patients during the year 1930 was four-and-a-half months.

"The advanced type of case is still in evidence in large numbers, and the severity of the condition on admission remains a marked feature. This group also furnishes numerous complications, such as tuberculous laryngitis, tuberculous enteritis, and tuberculous meningitis, the latter condition frequently manifesting itself as a terminal feature.

"*Treatment.*—The routine general treatment, as in previous years, has been directed towards careful supervised rest in bed, diet, graduated

exercise during convalescence, and, in certain cases, special treatment. Suitable cases have been treated by (1) aspiration, (2) aspiration combined with gas replacement, and (3) artificial pneumothorax.

"There has been an appreciable increase in the number of patients receiving collapse therapy and several, in addition to patients referred from tuberculosis dispensaries, are now attending as out-patients for continuance of treatment.

"*Dental Treatment.*—During the year 1930, the medical staff have performed 98 dental extractions, representing only emergency dentistry for the relief of pain. It is admittedly difficult to deal satisfactorily with the diet in tuberculous patients so long as the hygiene of the mouth remains imperfect, and in consideration of the high percentage of pyorrhœa alveolaris the dental caries present in a large proportion of sanatorium patients, the services of a dental surgeon appear almost a necessity.

"*Non-pulmonary Tuberculosis.*—There were treated during the year 28 cases, mainly children, suffering from abdominal tuberculosis; three deaths occurred in this group, but all others were dismissed well, and many of these cases derived marked benefit from artificial heliotherapy during convalescence.

"*Miscellaneous Cases.*—There were 41 cases treated during 1930 suffering from the following conditions other than tuberculosis of lungs or abdomen:—cercbro-spinal meningitis 2, tubercular meningitis 5, bronchitis 7, pleurisy 4, bronchiectasis 3, post-pneumonic conditions 3, lung tumour 6, other conditions 11.

"The work of the medical staff has been helped considerably by the advantageous proximity of the excellent Radiological Department, where screening of patients and artificial heliotherapy is carried out in addition to routine X-ray examinations.

"The discipline amongst the patients has been strictly maintained, and complaints have been few in number. All patients during convalescence have taken full advantage of the various forms of recreation and entertainment provided during the year."

W. M. ELLIOTT,  
*Physician-Superintendent.*

# RUCHILL HOSPITAL.—STATEMENT OF CASES TREATED ACCORDING TO SEX. DATA BASED ON DISMISSALS AND DEATHS FOR YEAR, 1930.

Disease.	Admitted.		Dismissed.		Died.		Remaining in Hospital at 31st Dec., 1930.				Mortality per cent.				Average residence (days).				Ages.				Altered Diagnoses
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Male.	Female.	Male.	Female.	
Typhus Fever, ...	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Enteric Fever, ...	22	—	18	—	3	—	6	—	—	—	14.2	—	—	—	69	—	—	—	—	—	—	—	—
Paratyphoid B., ...	13	3	10	3	—	—	3	—	—	—	—	—	—	—	60	42	—	—	—	—	—	—	—
Continued and Undefined Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Puerperal Fever, ...	—	3	—	—	—	3	—	—	—	—	—	—	—	—	—	—	12	—	—	—	—	—	—
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever, ...	679	906	631	882	10	10	121	114	—	—	1.5	1.1	—	—	43	19	15	211	361	69	229	513	150
Diphtheria and Mem. Croup, ...	312	441	291	412	22	19	47	68	7.0	4.4	7.0	4.4	—	—	55	53	14	7	121	148	44	133	204
Erysipelas, ...	306	330	269	296	32	26	25	24	10.5	8.1	10.5	8.1	—	—	23	21	9	8	21	10	270	13	20
Cholera, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-spinal Fever, ...	27	31	6	11	23	20	1	3	79.3	64.5	79.3	64.5	—	—	128	79	9	11	22	2	5	19	7
Ophthalmia Neonatorum, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trachoma, ...	3	1	1	4	1	—	3	—	—	—	50.0	—	—	—	5	84	1,002	—	—	—	—	—	—
Encephalitis Lethargica, ...	—	—	—	—	1	2	—	—	—	—	—	—	—	—	—	432	2	2	1	—	—	—	—
Acute Poliomyelitis, ...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acute Primary Pneumonia, ...	544	356	423	261	93	66	87	62	18.0	25.2	18.0	25.2	—	—	39	37	10	9	202	106	208	162	50
Acute Influenzal Pneumonia, ...	25	11	23	8	4	3	—	—	14.8	27.2	14.8	27.2	—	—	61	29	8	5	1	1	25	1	2
Malaria, ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	—
Dysentery, ...	23	14	20	14	3	—	—	—	15.0	—	15.0	—	—	—	26	11	—	—	15	2	6	8	1
Relapsing Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pulmonary Tuberculosis, ...	16	17	14	17	2	1	1	—	12.5	5.5	12.5	5.5	—	—	33	78	27	2	2	12	—	—	—
Other forms of Tuberculosis, ...	15	34	—	3	14	31	2	1	91.1	—	91.1	—	—	—	59	21	7	5	5	4	10	19	5
Measles, ...	239	247	255	265	31	32	—	—	10.8	10.7	10.8	10.7	—	—	41	36	13	22	235	46	5	205	42
German Measles, ...	2	6	2	6	—	—	—	—	—	—	—	—	—	—	26	13	—	2	—	—	—	—	—
Whooping-cough, ...	76	93	56	63	18	20	18	17	24.3	24.0	24.3	24.0	—	—	56	68	16	13	64	10	—	73	10
Chickenpox, ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	66	—	—	1	—	—	—	—	—
Mother with Child, ...	2	4	2	2	1	2	—	—	33.3	50.0	33.3	50.0	—	—	25	2	2	2	3	—	—	4	—
No apparent Disease, ...	8	8	8	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Others, ...	282	271	240	248	39	17	27	29	13.9	6.4	13.9	6.4	—	—	34	28	20	26	108	61	110	114	51
Influenza, ...	1	—	1	—	—	—	—	—	—	—	—	—	—	—	15	—	—	—	—	—	—	—	—
Beri-beri, ...	6	—	5	—	—	—	1	—	—	—	—	—	—	—	10	—	—	—	—	—	—	—	—
Mumps, ...	2	6	3	5	—	—	—	—	—	—	—	—	—	—	27	19	—	—	1	2	—	—	—
Impetigo, ...	2	2	2	2	—	—	—	—	—	—	—	—	—	—	15	33	—	—	—	1	1	2	—
Totals, ...	2,610	2,788	2,283	2,515	299	250	342	320	11.5	9.0	11.5	9.0	—	—	41	39	17	12	1,017	767	798	981	931
Phthisis, ...	319	363	253	274	91	79	120	129	26.4	22.3	26.4	22.3	—	—	191	135	84	83	20	61	263	12	41

RUCHILL HOSPITAL.—TUBERCULOSIS, TABLE SHOWING CASES DISMISSED AND DEATHS DURING THE YEAR 1930, AND THE AVERAGE RESIDENCE.

Disease.	Number of Cases of Dismissed, Deaths.	Average Residence, Days.							Ages.			Results of Treatment.				
		-50	-100	-150	-200	-300	300+	Average Days.	-5	-15	-25	25+	Much improved.	Im- proved.	Not improved.	
Pulmonary Tuberculosis—																
Early, ...	48	3	10	10	11	2	8	10	142	4	19	13	15	32	12	4
Intermediate, ...	269	24	39	63	73	52	35	31	162	3	30	103	157	75	158	36
Advanced, ...	131	130	114	48	33	25	23	18	104	9	22	78	152	25	48	58
Doubtful Cases, ...	5	—	3	1	1	—	—	—	54	—	—	1	4	2	1	2
Diagnosis not Confirmed, ...	11	—	3	3	2	2	1	—	103	—	2	4	5	8	2	1
Other Forms of Tuberculosis—																
Glands, ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Spine, ...	2	—	2	—	—	—	—	—	12	—	—	—	2	—	—	2
Bones other than Spine, ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hip Joint, ...	1	—	—	—	1	—	—	—	141	—	—	—	1	—	1	—
Joints other than Hip, ...	1	—	—	—	—	1	—	—	291	1	—	—	—	1	—	—
Abdomen, ...	25	3	4	4	2	7	6	5	196	8	18	2	—	14	10	1
Multiple, ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Genito-Urinary, ...	...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous, ...	31	10	16	7	7	3	4	4	152	6	11	2	22	20	4	7
Diagnosis not confirmed, ...	3	—	1	1	1	—	—	—	79	1	1	—	1	2	1	—
Total. ...	527	170	192	137	131	91	78	68	137	32	103	203	359	179	237	111

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## KNIGHTSWOOD FEVER AND TUBERCULOSIS HOSPITAL.

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The number of patients dismissed, including those who died during the year 1930, was 2,389, against 1,597 for the previous year. Two new pavilions, Nos. 1 and 2, for the treatment of fevers, were in use throughout the whole year for the first time, and this accounts for the very much greater number of patients treated. All the wards were used for the treatment of fevers except two pavilions, accommodating 80 patients with advanced phthisis.

The number of fever patients dismissed from hospital was 1,939, while 219 died, making a total of 2,158 patients. The mortality rate was 10.1 per cent., as against 13.8 per cent. for the previous year. This lower mortality rate was largely due to the fact that the death-rate of acute primary pneumonia was only 14.4 per cent., as against 22.6 per cent. for the previous year.

*Pneumonia.*—The number of patients treated totalled 796. The mortality rate for the whole group was 14.4 per cent., which was very much less than in the previous year, when the mortality rate was 22.6 per cent. The death-rate of the cases of broncho-pneumonia was 16.6 per cent., and in the cases of pneumonia occurring in adults the death-rate was 12.1 per cent. Out of 76 cases of broncho-pneumonia dismissed during November and December, almost one-half of the cases merely suffered from bronchitis, so that the illness was very mild in character during the last two months of the year.

During the year a bacteriological and clinical investigation was made of 100 typical cases of lobar pneumonia, with special reference to the type of pneumococcus present. The cases included all ages up to 60 years of age. The percentage incidence of the various strains of pneumococci was as follows:—

Type 1.	Type 2.	Type 3.	Type 4.
38	35	4	23

The mortality rate was very low, namely, 9 per cent.

Type.	Number of Cases.	Number of Deaths.	Percentage Death-rate.
I. ...	38	3	7.9
II. ...	35	3	8.6
III. ...	4	1	25.0
IV. ...	23	2	8.6

It is to be noted that the percentage incidence of the various strains of pneumococci was much the same as that found by other workers, and yet the death-rate was very low, although the cases were all of a very severe type and were not treated with anti-pneumococcal serum. Lung puncture was adopted in a number of cases as a means of obtaining the pneumococcus, especially in young children

who were unable to expectorate. Of the six cases of lobar pneumonia so examined, five were due to Type 1 pneumococci and one to a Group 4 pneumococcus.

Varying opinions have been expressed as to the significance of a bacteraemia in lobar pneumonia, and this difference of opinion seems to depend on the amount of blood used for the examination. In this investigation only 2 cc. of blood were used, and it was found that all the cases giving a positive blood culture ran a very severe course. Of those with a positive blood culture 60 per cent. died, while there were no deaths among those with a negative blood culture. It was thus evident that the presence of a bacteraemia in a case of lobar pneumonia as evidenced by finding pneumococci in 2 cc. of the patient's blood was of great importance from the point of view of prognosis.

*Scarlet Fever.*—A very much larger number of patients were treated, 585, as against 261 for the previous year. The type of scarlet fever was, to a very large extent, mild, and true toxic or septic cases were very rare. The results obtained from treatment may be classed as below.

TABLE I.

Total cases treated.	Recovered.	Much improved.	Died.
585	569	12	4

Table II. shows the relevant details of the group of cases "Much Improved."

TABLE II.

Rhinitis still present,	...	...	...	...	...	3
Otorrhœa still present,	...	...	...	...	...	1
Cervical adenitis still present,	...	...	...	...	...	3
Rhinitis dry but likely to recur (home at parents wish),	...	...	...	...	...	1
Old standing endocarditis. I.S.Q. (Recovered from scarlet fever),	...	...	...	...	...	2
Fair and improved....	...	...	...	...	...	2
						<hr/> 12 <hr/>

Four cases died whilst under treatment in hospital; this figure giving a mortality rate of 0·68 per cent., which compares favourably with the rate noted in previous years. The causes of death were :— (1) patient, aged six months, died on twelfth day, broncho-pneumonia; (2) patient, aged four years, died eighteenth day, septic scarlet fever; (3) patient, three years, died twenty-ninth day, septic scarlet fever, broncho-pneumonia and septicaemia; (4) patient, six years, died thirty-fifth day, fulminant secondary scarlet fever.

While the type of illness was mild in the majority of the cases, complications were noted in 263, or 44·9 per cent., of the 585 patients treated. In most cases the complications yielded readily to treatment.

The majority of the cases required little or no special treatment, and scarlet fever antitoxin was employed in only 25 cases. The anti-toxin was supplied by Messrs. Burroughs, Wellcome & Co. and Messrs.

Parke, Davis & Co. It was administered by the intramuscular route and also by the intravenous route.

The results obtained from the administration of serum are shown in Table IV.

TABLE IV.

Route.	Number of Cases.	Cases with complications (with day of illness on which complications were noted).	Deaths.
Intravenous,	... 11	1 { Cervical adenitis, ... .. 22	—
		{ Tonsilitis, ... .. 28	
		2 { Rhinitis, ... .. 7	
		{ Pharyngitis, ... .. 7	
		3 { Post-nasal discharge, ... .. 7	
Intramuscular,	... 14	{ Otorrhœa, ... .. 26	1
		1—Cervical adenitis, ... .. 29	
		2—Otorrhœa, ... .. 14	
		3—Skin lesions, ... .. 41	
		4—Post-nasal discharge, ... .. 9	
		5 { Cervical Adenitis, ... .. 19	
		{ Otorrhœa, ... .. 23	
		6—Rheumatism, ... .. —	
		7—Scarlet fever (septic), ... .. —	1

In one case, severe toxic scarlet fever, serum was administered by both routes, 1,200,000 units being injected in all, and the patient was observed to make a very spectacular recovery. In spite of the large dosage of serum employed, this patient suffered from a septic lesion of the thumb on the twenty-ninth day of illness and from rhinitis on the forty-third day. In one case, that of a man aged 27 years, very severe anaphylactic shock was observed. The serum was in most cases administered on the day of the patient's admission to hospital, the commonest day being the third.

The fewness of the cases receiving serum treatment prevents one from drawing any definite conclusions, but it was considered that better results and the development of fewer complications followed the intravenous than the intramuscular route of serum administration. It is interesting to note that intramuscular administration of serum was often followed by much more definite blanching of the scarlatinal rash than was observed to follow the intravenous injection of serum.

Diphtheria antitoxin was administered to 36 patients, the majority of whom suffered from a purulent rhinitis. The average dosage was 8,000 units, and the most frequent period of injection was during the fifth week of illness. Several cases of diphtheria received larger doses, up to 20,000 units, and with one exception made uneventful recoveries. This one patient's ultimate good recovery was retarded by the onset of pharyngeal paralysis, despite the early injection of 16,000 units of diphtheria antitoxin.

The aurist visited cases of otorrhœa and rhinorrhœa at intervals of approximately one week. During the year tonsillectomy was performed on 18 patients with a view to hastening the drying up of chronic discharges. During the same period the conservative mastoid operation was performed thrice with a similar object.

During the year very few cases of "cross infection" occurred in the wards. A policy of prompt isolation of such cases effectively prevented any appreciable spread of the second infection.

The original diagnosis in 26 cases (4.4 per cent.) was found, on admission to hospital, to be erroneous, and was altered accordingly. The various diseases mistaken for scarlet fever demonstrated that 40 per cent. of such cases did not suffer from any morbid process whatever.

Thirty-eight of the junior nursing staff were subjected to the Dick test, and there were four positive reactors, all of whom were actively immunised. It is interesting to note that two negative reactors developed scarlet fever later in the year, but it is not easy to draw any conclusion from this occurrence, as it might have arisen from some fallacy in the performance of the test.

The bulk of the original work on scarlet fever performed in this hospital during the past two years appears to be chiefly of negative value, and it would seem as if the streptococcus scarlatinæ plays only a part in the causation of the disease, and that there may be some other unknown causative factor.

*Diphtheria.*—The number of patients dismissed from hospital was 245 and 12 died, making a total of 257 patients. The mortality rate was 4.6 per cent., as against 5.6 per cent. in the previous year. Four deaths followed the operation of tracheotomy and six of the remaining deaths were due to malignant forms of the disease. During the last two years the type of the disease admitted has been much more severe than formerly. All the severe cases were given rather large doses of the antitoxin intravenously as well as intramuscularly, and the beneficial results of this treatment was much more rapidly produced than if the serum had been administered by the intramuscular route alone. The aurist enucleated the tonsils and removed the adenoids of 20 patients who were found to be carriers, and in a very short time after the operation these patients were able to be dismissed.

The Schick test was performed on twelve nurses, seven of whom were found to give a positive reaction and were later immunised with toxoid antitoxin mixture. This was of great value in administration, as all the negative reactors could be safely sent to act as nurses in diphtheria wards.

*Measles.*—The number of cases treated was 242. The fatality rate, 13.6 per cent., was not very high, and was due to pneumonia alone or combined with enteritis.

*Whooping-cough.*—The number of patients discharged from hospital was 80, and 27 died, making a total of 107 patients. The majority of the deaths were due to pneumonia alone or combined with convulsions.

*Pulmonary Tuberculosis.*—During the past year 177 phthisis cases were discharged from hospital, and 54 died, making a total of 231

patients. The hospital was mainly used for the treatment and isolation of the more advanced types of cases. As an illustration of this no less than 89 per cent. of these cases were in an advanced stage of the disease on admission to hospital. The following table shows the medical classification into which these patients were grouped when admitted :—

Stage of Disease.				Number of Cases.	Number of Deaths in each Group.
Early,	...	...	...	3	—
Intermediate,	...	...	...	22	1
Advanced,	...	...	...	206	53
Total,				231	54

Details of each of these groups are shown in the following table :—

Stage of Disease.			Arrested	Much improved.	Improved.	Not improved.	Died.	Total.
Early Cases,	...	...	—	1	1	1	—	3
Intermediate Cases,	...	...	—	3	16	2	1	22
Advanced Cases,	...	...	—	11	112	30	53	206
Total,			...	15	129	33	54	231

NOTE.—The above table includes 10 patients who died within one month of admission.

Apart from careful nursing and attention to the general health, no special form of treatment was adopted, as the majority were in a very advanced stage of the disease. The health of the hospital staff has been good, no illness of a very serious nature having occurred.

WILLIAM DOW,  
*Physician-Superintendent.*

May, 1931.





## SHIELDHALL FEVER HOSPITAL.

During the year 1,072 patients passed through the hospital, an increase of 54 as compared with the previous twelve months. The general death-rate was 9·2 per cent. as compared with 9·0 per cent. for 1929.

A number of improvements were carried out, notably the installation of electric light, the renewal of the internal telephone system, and the provision of five additional cubicles for nurses. Extensive repairs to flooring and other woodwork made the whole-time services of a joiner essential. The health of the nursing staff has been very good, there being no case of infectious disease during the year.

*Scarlatina*.—Four hundred and twelve patients were treated, a considerable increase on the 1929 figure. As usual, only about two-thirds of the total escaped complications, the most frequent being albuminuria and nephritis, 3·9 per cent.; arthritis, 6·7 per cent.; cervical adenitis, 19·6 per cent.; rhinorrhœa, 13·8 per cent.; and otorrhœa, 3·9 per cent. Discharging ears were very few as compared with previous years, making the sessions of the aural surgeon light. His work may be thus summarised. Number of patients attended, 28; operations—tonsillectomy 5, paracentesis 2, mastoid operation 1. Results of operative treatment:—

			Otorrhœa.	Rhinorrhœa.
Immediate cessation of discharge,	...	...	1	2
Gradual improvement,	...	...	1	—
No improvement,	...	...	2	—
			<u>4</u>	<u>2</u>

The four fatal cases of scarlatina bring the mortality rate disappointingly near one per cent. The immediate causes of death of these patients were, respectively, nephritis (two cases), hyperpyrexia, and streptococcal septicæmia.

*Scarlatina Return Cases*.—Statistics with regard to return cases in the South-Western Division during 1929 (Annual Report, pp. 101-103) show up this hospital in rather an unfavourable light. While certain of these infections are generally regarded as inevitable, a return case rate of 4·4 per cent. appears unduly high. Various possible factors in causation are dealt with, such as length of time in hospital, size of house, &c., but no mention is made of the essential point, viz.:—Does the patient leave hospital in an infectious condition? It is reasonable to suppose that a warm bath immediately prior to dismissal gives rise to a certain amount of chilling, especially in cold weather, with the development, even before the child reaches home, of a virulent

nasal discharge. A change was therefore made in the routine, the bath being given on the evening before dismissal, in a "clean" ward where the patient passed his last night in hospital. Two periods can thus be compared:—(1) 1st November, 1929, to 31st March, 1930, under the old method; and (2) 1st November, 1930, to 31st March, 1931, under the new. Results:—

	1st Period.	2nd Period.
Number of patients dismissed, ... ..	205	195
Number of return cases, ... ..	6	6*
Percentage of return cases, ... ..	2.9	3.1

\* Includes two from one household.

Of the five infecting cases of last winter, two were lost trace of, the returns going to other hospitals, two developed nasal discharges some time after dismissal, and in the case of the fifth some of the child's clothing was worn by another member of the family, who became infected. The conclusion is that a certain proportion of return cases will occur in spite of all precautions that can reasonably be taken.

*Diphtheria*.—Two hundred and ninety-seven patients were treated, with a mortality rate of 5.4 per cent. The types observed were: faucial, 247; faucial and nasal, 10; faucial and laryngeal, 11; laryngeal, 18; bacteriological, 11. Seven of the laryngeal patients required tracheotomy, and of these one died of pneumonia on the twenty-first day after operation, while the others made a good recovery. Of the 16 fatal cases of diphtheria, several were moribund on admission, and eight patients died within a few days of coming to hospital.

*Pneumonia*.—Three hundred and thirty-three patients were treated. The mortality rate (22.2 per cent.) is higher than it has been for several years, this being to some extent due to the fact that fewer slight and doubtful cases are being notified. Among the complications may be mentioned panophthalmitis, pneumococcal meningitis, abscess of the lung, and pulmonary new-growth, each represented by one case. Empyema was unusually frequent, especially towards the close of the year. Of the ten patients operated on, the ages ranged from 1 year 11 months to 35 years. The method of operation was rib resection, local anæsthesia—novocain  $\frac{1}{2}$ -1 per cent.—being used in preference to chloroform in all but very nervous children. Closed drainage has been substituted for the open method, with good results; i.e., a long tube leads from the pleural cavity to dip into a bottle of water at the bedside. Irrigation with Dakin's solution proved very beneficial. The method of air-tight suction drainage described by McEachern (Winnipeg, August, 1930) was given a trial, which proved unsuccessful. The pus was of pneumococcal type in all but one case; this, a streptococcal empyema, ended fatally. There was one other death in a child of two years. A large apical empyema proved troublesome and necessitated transfer to Robroyston. All the other patients made a good recovery, or were convalescent by the end of the year.

*Other Diseases.*—The remaining 30 cases included five of whooping-cough, two of cerebro-spinal fever, and one of tuberculous meningitis, while there were 17 non-infectious conditions. Thirty-five diagnoses, or 3.3 per cent., were revised during the year.

Chickenpox was again responsible for the cross-infection of a scarlatina ward. It is now well known that a case of herpes zoster may initiate an outbreak of varicella, but chickenpox followed by herpes is much less common. "The sequence zoster—varicella is eight or ten times as frequent as the sequence varicella—zoster" (Brain). The following small epidemic contains an example of each.

Cases.	Age.	Admitted.	Developed.	On.
A, ...	7½ years,	... 26/11/30	... Hesper Zoster,	... 15/12/30
B, ...	9 "	... 8/12/30	... Chickenpox,	... 18/12/30
C, ...	3 "	... 29/10/30	... Herpes Zoster,	... 10/1/31
D, ...	2 "	... 17/12/30	... Chickenpox,	... 25/1/31
E, ...	2 "	... 1/12/30	... "	... 25/1/31

Cases A and B do not appear to be related, but C was undoubtedly infected from B, and D and E from C.

W. NAPIER,  
*Physician-Superintendent.*

May, 1931.

SHIELDHALL HOSPITAL—STATEMENT OF CASES TREATED ACCORDING TO SEX.  
DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1930.

Disease.	Remaining in Hospital 31st Dec., 1930.						Average Residence (days).								Ages.				Altered Diagnosis			
	Admitted.		Dismissed.		Died.		Mortality per cent.				Dismissals,				Deaths.		Males.			Females.		
	M.	F.	M.	E.			M.	F.	M.	F.	M.	F.	M.	F.	-15	+15	-5	+15				
Enteric Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Scarlet Fever, ...	166	245	158	250	1	3	24	15	0·6	1·2	38	35	3	8	48	97	14	51	156	46	12	
Diph. and Memb. Croup	146	155	137	144	8	8	17	24	5·5	5·2	41	43	9	8	48	89	8	39	96	17	12	
Cerebro-spinal Fever,	...	2	...	1	...	1	...	...	...	50·0	...	43	...	2	...	...	...	1	1	...	...	
Acute Poliomyelitis, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Lobar Pneumonia, ...	98	60	80	50	18	9	8	5	18·3	15·2	29	25	9	18	14	24	60	2	23	34	10	
Broncho-pneumonia, ...	85	87	64	65	27	20	5	5	29·6	23·5	30	18	13	3	90	1	...	81	...	4	...	
Measles, ...	...	1	4	1	2	...	2	...	...	50·0	...	...	...	6	...	1	...	3	1	...	...	
German Measles, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Whooping-cough, ...	...	3	2	3	2	...	...	...	...	...	26	14	...	...	2	1	...	2	...	...	1	
Non-pulmonary tuber- culosis, ...	...	...	1	...	...	1	...	...	...	100·0	...	...	...	3	...	...	...	1	...	...	...	
Other affections, ...	...	10	8	10	6	...	1	...	1	...	14·2	16	17	...	3	7	2	1	3	1	3	
Totals, ...	...	509	564	453	520	54	45	54	50	10·6	7·9	34	32	9	14	209	215	83	183	278	104	35



## ROBROYSTON HOSPITAL.

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The accommodation in the hospital underwent two principal changes during the year. Following upon the opening of Mearnskirk Hospital for children in April a considerable number of children under 15 years with non-pulmonary infections were transferred there for continued treatment, their places being taken mainly by adult patients. Further, a pavilion has been set aside for the treatment of puerperal fever. This pavilion was reconstructed for this purpose by the insertion of a number of cubicles and a treatment room. The new accommodation, providing for about 50 patients, was opened in October. During the year also, owing to pressure upon accommodation for pneumonia, a pavilion has been almost continuously devoted to the treatment of this affection.

On account of these transferences and rearrangements of accommodation it has not been possible to provide information in this report strictly comparable with previous years, because, owing to the transferences to Mearnskirk, a large number of patients were not treated to a conclusion. The tables dealing with the several groups of tuberculous infection are, therefore, incomplete.

### CERVICAL ADENITIS.

*Table No. 1.*—About three times the number of patients were treated in 1930 as compared with the previous year. This is due to the fact that beds have now become more available for the treatment of less urgent cases. Sixteen of these were advanced and nine in the earlier intermediate stage. Radical removal was practised where possible, but in many the sole aim was satisfactory healing of long-standing sinuses. The average residence was 147 days.

### SPINAL CARIES.

*Table No. 2.*—Eighty-three patients with spinal tuberculosis passed through the hospital, an increase of 47 over last year. A large number, under 15 years of age, were transferred to Mearnskirk Hospital for completion of treatment there. There has still been an unsatisfactory number of patients who left or who were removed because of the lengthy treatment required. An increase in the proportion of patients admitted with sinuses is to be noted. The average stay in hospital here was 805 days, and there were eight deaths.

### TUBERCULOSIS OF BONES OTHER THAN SPINAL.

*Table No. 3.*—There has been an increase of rather under 50 per cent. of such lesions. Eighty-four per cent. of these showed abscess or sinus formation. The results were, on the whole, satisfactory, but for reasons already given are not represented on the table. The average residence was 429 days and there were no deaths.

## TUBERCULOUS HIP JOINT DISEASE.

*Table No. 4.*—As against 31 patients treated in 1929, 58 were discharged during the year. The drop in the number discharged fit and the rise in the numbers under less satisfactory headings is explained by transference to other institutions. The condition on admission was much as last year. There has been a rise in the average residence from 697 days to 727. The deaths of three incurable patients after a long stay in hospital has apparently offset the lower figures arising from transference to Mearnskirck.

## TUBERCULOSIS OF JOINTS OTHER THAN HIP.

*Table No. 5.*—The number of patients treated was 61, which compares closely with last year's figures. In the history of the hospital results have seldom been better, and the percentage of good results is decidedly higher than previously. Close on 67 per cent. of the patients were admitted without abscess or sinus and this fact alone goes a long way to explaining the improved figure. The figure for average residence shows a slight increase.

## ABDOMINAL TUBERCULOSIS.

*Table No. 6.*—There was a considerable increase in the number of patients treated and this increase was most noticeable in the acute lesions which rose from two to ten. In spite of this the death rate was more than halved. Only two patients required operation. The average residence was 286 days, a considerable increase on last year's figures.

## MULTIPLE LESIONS.

*Table No. 7.*—The number of such patients discharged during 1930 was slightly higher than in 1929.

## GENITO-URINARY AND MISCELLANEOUS.

*Table No. 8.*—Apart from two deaths from advanced renal phthisis the figures for 1930 show no appreciable difference from those of the preceding year.

## TREATMENT.

During last year, and particularly in the later portion of it, the type of lesion dealt with necessitated operative measures in many cases. In the average clean adolescent patient treatment remained conservative.

*Aspirations and Injections.*—Little need be added to what was said in previous reports about aspiration. During 1930 the number of aspirations dropped from 1,533 to 1,262, and of paste injections from 300 to 196, due to alteration in type of case admitted during part of the year following. It must be remembered that not all cases of long-standing sinus formation will yield to paste injection, and that in many such a course may be inadvisable.

*Operations.*—As before, operation was, in bone and joint cases, undertaken to correct, wholly or partially, deformity very often of considerable standing. During 1930, 93 major and 68 minor operations were undertaken. The increase in major operations is particularly noticeable.

*Appliances.*—A considerable drop in the number of plaster splints is a feature. On the other hand, certain appliances provided have increased from 120 to 155, a figure which includes a number of renewals for patients already dismissed. A small but increasing number of all-metal appliances were also built.

*Radiology.*—Seven hundred and thirty-five patients were radiographed, involving the taking of 1,530 photographs. The consulting radiologist paid 53 visits, but a considerable number of plates have been taken by members of the staff. These latter consisted of pyelograms, skiagrams of lipiodol injections, barium meals, outdoor pneumothoraces, &c. Numerous screenings were also undertaken by the resident staff.

*Artificial Heliotherapy.*—There is little to add to what was said last year on this matter. Broadly speaking, the type of patient lately admitted is less able to stand transport to the special department, but full use has been made of installations in two of the wards. Nevertheless a drop in the numbers of exposures and patients treated is to be anticipated.

In addition to tuberculous patients several convalescent cases of puerperal sepsis and pneumonia received exposures with apparent benefit. The total of 12,544 exposures shows a slight decrease from last year's figure. These were given to 250 patients.

*Pulmonary Tuberculosis.*—There has been a marked change in the type of lesion admitted to the pavilion for female patients, allowing more scope for collapse therapy. During the year artificial pneumothorax was induced in 22 patients, successfully in all but six patients. These involved 291 refills. Many of these patients were also treated with Sanocrysin. These and others not treated by pneumothorax totalled 28, each receiving on the average 4.33 grams of Sanocrysin. Thoracoplasty was done in five cases; four were successful and one died; the latter a patient with severe bronchiectasis. In some of these the operation was preceded by phrenic evulsion. In the male ward the type of advanced case admitted remained much the same. One patient was treated by thoracoplasty, one by artificial pneumothorax, and one other artificial pneumothorax was unsuccessfully attempted. No other suitable cases were found in spite of rigorous search. Six patients received an average dose of 5.6 grams of Sanocrysin, but this line of treatment did not yield successful results. In addition 162 refills of artificial pneumothoraces were done for outdoor patients attending at regular intervals.

*Dental Treatment.*—During the year Dr. Hugh M'Kay, L.D.S., made 46 visits, and the dental work carried out is as follows :—

Fillings—					
Amalgam,	...	...	...	...	119
Cement,	...	...	...	...	29
Dressings with temporary fillings,	...	...	...	...	6
Extractions with local anæsthetic,	...	...	...	...	450
Extractions with general anæsthetic,	...	...	...	...	80
Scaling,	...	...	...	...	492
Pulpitis cases,	...	...	...	...	6
Examinations,	...	...	...	...	250 (approx.)

*Laboratory.*—The following examinations have been carried out during the year :—

Sputum for tubercle bacillus,	...	...	...	...	2,100
Throat cultures for diphtheria,	...	...	...	...	102
Urines (microscopical investigations, cultures, &c.),	...	...	...	...	251
Cultures from sinuses,	...	...	...	...	25
Miscellaneous,	...	...	...	...	252

*Education.*—The education of the ambulant and bed children was carried on as in past years. The hospital has been, however, in a state of transition since May, 1930, and most of the children and young adolescents in the various classes have been transferred to Mearns Kirk Children's Hospital. The average number of children on the roll was 120, with an average attendance of 103.

*Puerperal Sepsis and Pyrexia.*—During the summer of 1930 alterations in Pavilion 3 were completed and reception commenced early in October. The provision of several cubicles has allowed of an attempt being made to isolate each admission until a final diagnosis was made. Thereafter treatment was carried out in the main wards, patients being grouped bacteriologically as far as possible. When it is explained that out of 49 dismissals since the opening of the pavilion till the end of the year, ten showed no sign of sepsis, the necessity for providing cubicle accommodation is explained. Among the 39 proven septic cases, seven died, giving a mortality of close on 18 per cent. A more complete résumé of the work done will be given in the Annual Report for year 1931, when all dismissals from the inception of the ward till the end of that year will be summarised in some detail.

*Pneumonia.*—During the first and fourth quarters of the year 137 cases certified as pneumonia were treated in the hospital. Of these 21, or 15·3 per cent., were not finally classified as pneumonia.



Table I. shows the type of disease, age, and sex distribution and number of deaths for lobar pneumonia, broncho-pneumonia, and bronchitis—in all, 129 cases. Eight patients admitted were found to be suffering from acute infections other than pneumonia.

TABLE I.—SHOWING AGE DISTRIBUTION OF RESPIRATORY AFFECTIONS WITH DEATHS SHOWN AS RAISED FIGURES.

Age.			Lobar Pneumonia.		Broncho-pneumonia.		Bronchitis.	
			M.	F.	M.	F.	M.	F.
Under 1,	...		1 <sup>1</sup>	—	16 <sup>3</sup>	13 <sup>2</sup>	1	3
1,	...		1 <sup>1</sup>	—	13 <sup>1</sup>	17 <sup>3</sup>	3	3
2,	...		2	1	5	6	—	2
3,	...		—	—	4	6 <sup>1</sup>	—	1
4,	...		1	1	—	2	—	—
5,	...		2	3 <sup>1</sup>	3	6 <sup>1</sup>	—	—
10,	...		—	2	—	2	—	—
20,	...		—	3 <sup>2</sup>	—	1	—	—
30,	...		—	—	—	—	—	—
40,	...		—	1 <sup>1</sup>	—	1	—	—
50-60,	...		—	2 <sup>2</sup>	—	1	—	—
Totals, ...			7 <sup>2</sup>	13 <sup>6</sup>	41 <sup>4</sup>	55 <sup>7</sup>	4	9
			<u>20<sup>8</sup></u>		<u>96<sup>11</sup></u>		<u>13</u>	

Cases regarded as lobar pneumonia numbered 20, with eight deaths. The deaths were due to pneumococcal empyema, and enteritis in a child of 1½ years; enteritis in a girl of seven years; the remainder occurred in older people.

As regards broncho-pneumonia, there were 96 patients, with 13 deaths, all in children under five years, giving a death-rate of 11·5 per cent. The complications were mainly due to gastro-enteritis occurring among those patients admitted in the first quarter of the year. Some of these were proved to be due to bacillary dysentery.

During the year 25 non-tuberculous patients were treated as follows:—chronic epididymitis, hydronephrosis, acute rheumatism and progenic cystitis, pyogenic abscess of scrotum, no disease abnormality found (under observation for renal tuberculosis), non-tuberculous pyuria (for observation), talipes equinovarus, deformity of knee following sepsis of soft tissues, one each; Perthe's disease, three cases; chronic arthritis (non-tuberculous), rheumatoid arthritis of spine, congenital dislocation of hip, rickets, one each; chronic bronchitis, four cases; broncho-pneumonia, unresolved pneumonia, carcinoma of face, myeloid leukæmia, one each; lung tumour, two cases—total 25.



The following table indicates the state of nutrition of the various groups of tubercular patients on admission :—

Disease.				Good.	Fair.	Poor.	Total.
Pulmonary Tuberculosis—							
Early, ...	...	...	...	2	10	1	13
Intermediate, ...	...	...	...	7	13	13	33
Advanced, ...	...	...	...	8	30	66	104
Non-tuberculous, ...	...	...	...	7	15	3	25
Other Forms of Tuberculosis—							
Spine, ...	...	...	...	25	40	18	83
Glands, ...	...	...	...	13	7	5	25
Bones other than Spinal, ...	...	...	...	6	14	5	25
Hip Joint, ...	...	...	...	15	29	14	58
Joints other than Hip, ...	...	...	...	22	26	13	61
Abdomen, ...	...	...	...	4	26	33	63
Multiple, ...	...	...	...	2	16	26	44
Genito-urinary and Miscellaneous, ...	...	...	...	6	6	5	17
Totals, ...				117	232	202	551

JOHN WATSON,  
*Medical Superintendent.*

29th May, 1931.

ROBROYSTON HOSPITAL.—TABLE SHOWING CASES DISMISSED AND DEATHS DURING THE YEAR 1930,  
AND THE AVERAGE RESIDENCE.

Disease.	Number of Cases Dis- missed.	Number of Deaths.	Duration of Residence.							Average.	Ages.				Results of Treatment.			
			-30	-50	-100	-150	-200	-300	300+		-5	-15	-25	25+	Much improved.	Im- proved.	Not im- proved.	
Pulmonary Tuberculosis—																		
Early, ...	...	13	—	—	2	2	2	1	4	2	229	—	6	4	3	12	1	—
Intermediate, ...	...	33	—	3	3	8	2	2	6	9	320	1	4	17	11	24	6	3
Advanced, ...	...	67	37	18	9	23	8	10	8	28	233	—	8	29	67	24	20	60
Diagnosis not confirmed, ...	...	8	2	2	1	4	1	2	—	—	81	2	2	2	4	5	2	3
Other Forms of Tuberculosis—																		
Glands, ...	...	25	—	5	1	5	2	5	4	3	147	—	11	10	4	13	7	5
Spine, ...	...	75	8	7	2	4	—	1	8	61	805	20	37	18	8	26	38	19
Bones other than spine, ...	...	25	—	1	—	3	2	2	8	9	429	6	11	5	3	14	9	2
Hip Joint, ...	...	55	3	1	3	3	1	2	5	43	727	10	38	7	3	30	19	9
Joints other than hip, ...	...	60	1	1	2	3	6	3	11	35	477	13	34	7	7	34	25	2
Abdomen, ...	...	57	6	8	3	3	7	7	10	25	286	13	32	16	2	41	8	14
Multiple, ...	...	35	9	2	1	1	3	1	8	28	658	16	14	9	5	10	17	17
Genito-urinary, ...	...	10	2	—	—	2	—	4	1	5	288	—	1	7	4	3	6	3
Miscellaneous, ...	...	5	—	—	1	—	—	2	2	—	167	—	3	1	1	2	2	1
Diagnosis not confirmed, ...	...	15	—	—	2	4	2	3	—	4	207	1	6	2	6	11	3	1
Total, ...	...	483	68	48	30	65	36	45	75	252	445	82	207	134	128	249	163	139

SURGICAL CASES : TABLE No. 1.

## GLANDS.

Age Groups.	CONDITION ON ADMISSION.			Total.	TREATMENT.				Total.	CONDITION ON DISMISSAL.				Total.	DISMISSED.					Total.	COMPLICATIONS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	Early.	Intermediate.	Late.		Operation.	Aspiration.	Tuberculin.	Other.		Well.	Improved.	Healed.	Discharging.		Fit.	Unfit.	At Own or Parents' request.	For Other Reasons.	Died.		Tubercular.	Other.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
— 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—</

SURGICAL CASES : TABLE No. 2. SPINE.

Age Groups.	CONDITION ON ADMISSION.				TREATMENT.					CONDITION ON DISMISSAL.			DISMISSED.					COMPLICATIONS.								
	Abscess.	Sinus.	Abscess and Sinus.	No Abscess or Sinus.	Total.	Deformity on Admission.	Operation.	Aspiration.	Aspiration and Injection.	Appliances.	Other.	Total.	Deformity on Dismissal or Death.	Healed, including Arrested.	Improved.	Not Improved.	Total.	Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.	
- 2	1	—	—	—	1	1	—	1	—	—	—	1	1	1	—	—	—	1	1	—	—	—	—	1	1	—
- 3	—	—	—	5	5	5	—	—	1	3	1	5	5	5	2	2	1	5	2	—	1	2	—	5	3	2
- 4	1	—	—	4	5	4	—	—	—	5	—	5	3	3	2	2	—	5	2	—	—	3	—	5	1	3
- 5	3	—	—	6	9	9	—	1	1	6	1	9	8	4	5	—	—	9	3	—	—	6	—	9	4	1
-10	7	3	2	12	24	20	—	3	3	12	6	24	17	8	13	2	23	6	—	—	3	14	1	24	9	7
-15	8	2	—	3	13	10	1	3	2	3	4	13	8	2	9	—	11	2	—	—	1	8	2	13	5	5
-20	3	1	—	6	10	10	2	1	—	4	3	10	7	3	2	3	8	3	—	—	4	1	2	10	6	3
-25	2	2	—	4	8	6	—	1	—	4	3	8	6	1	4	3	8	4	—	—	4	—	—	8	3	1
-35	2	—	2	1	5	4	—	—	—	1	4	5	4	—	1	2	3	—	—	—	3	—	2	5	4	—
-45	—	1	1	—	2	2	—	—	1	1	—	2	2	2	—	—	—	2	2	—	—	—	—	2	1	1
45+	1	—	—	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	1	1	—	1
Total, ...	28	9	5	41	83	71	3	10	8	39	23	83	61	26	38	11	75	25	—	—	16	34	8	83	37	24

SURGICAL CASES: TABLE No. 3. BONES other than Spinal.

Age Groups.	CONDITION ON ADMISSION.				TREATMENT.				CONDITION ON DISMISSAL.			Total.	DISMISSED.					Total.	COMPLICATIONS.						
	Abscess.	Sinus.	Ulceration.	No Abscess, Sinus, or Ulceration.	Total.	Deformity on Admission.	Operation.	Aspiration.	Aspiration and Infection.	Appliances.	Other.		Total.	Deformity on Dismissal.	Healed, including Arrested.	Improved.	Not Improved.		Total.	Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3	1	2	—	—	3	1	—	—	—	—	3	3	—	2	1	—	—	3	2	—	—	1	—	1	
4	—	1	—	—	1	1	1	—	—	—	—	1	1	1	—	—	—	1	1	—	—	—	—	—	
5	2	—	—	—	2	—	—	—	—	—	2	2	—	1	1	—	—	2	1	—	1	—	—	—	
10	2	2	—	2	6	—	—	—	1	1	3	6	—	4	1	1	—	6	3	—	—	3	—	4	
15	2	2	—	1	5	2	1	—	1	2	1	5	1	1	4	—	5	—	—	—	—	5	—	3	
20	—	3	—	—	3	1	2	—	—	—	1	3	—	3	—	—	3	3	—	—	—	—	—	1	
25	—	1	—	1	2	—	1	—	—	1	—	2	—	1	1	—	—	2	2	—	—	—	—	—	
35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
45	—	2	—	—	2	—	—	—	—	1	1	2	—	1	—	1	—	2	—	—	2	—	—	—	
45+	—	1	—	—	1	—	—	—	—	—	—	1	1	—	1	—	—	1	—	—	1	—	—	—	
Total, ...	7	14	—	4	25	5	5	1	2	7	10	25	2	14	9	2	25	12	—	3	10	—	25	10	2



SURGICAL CASES : TABLE No. 4.

## HIP JOINT.

Age Groups.	CONDITION ON ADMISSION.				Deformity on Admission.	TREATMENT.					DEFORMITY ON DISMISSAL.		CONDITION ON DISMISSAL.			DISMISSED.					Total.	COMPLICATIONS.			
	Abscess.	Sinus.	No Abscess or Sinus.	Total.		Operation.	Aspiration.	Injection.	Appliances.	Other.	Total.	Improved.	Not Improved.	Healed, Including Arrested.	Improved.	Not Improved.	Fitt.	Unfit.	At Own or Parents' request.	For other Reasons.			Died.		
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
- 3	—	—	3	3	2	—	—	—	3	—	3	2	—	2	1	—	—	1	—	2	—	—	3	—	3
- 4	—	1	2	3	3	1	—	—	2	—	3	3	—	2	1	—	—	—	2	—	—	3	—	1	
- 5	—	—	4	4	3	1	—	—	3	—	4	3	—	4	—	—	—	—	2	—	—	4	1	2	
-10	5	3	16	24	21	3	3	1	16	1	24	15	6	12	9	2	23	8	—	15	1	24	6	9	
-15	3	2	9	14	13	3	1	—	10	—	14	12	1	6	6	2	14	5	—	1	8	14	3	3	
-20	—	1	4	5	5	2	—	—	2	1	5	3	2	3	1	1	5	3	—	1	1	5	—	—	
-25	—	—	2	2	2	—	—	—	1	1	2	2	—	1	1	—	2	—	1	1	—	2	1	—	
-35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
-45	1	1	—	2	2	—	1	—	—	1	2	—	2	—	—	1	1	—	1	—	1	2	—	2	
45+	—	1	—	1	1	—	—	1	—	—	1	—	1	—	—	—	—	—	—	—	—	1	1	—	
Total, ...	9	9	40	58	52	10	5	2	37	4	58	40	12	30	19	6	55	20	—	4	31	3	58	12	20

SURGICAL CASES : TABLE No. 5. JOINTS other than Hip.

Age Groups.	CONDITION ON ADMISSION.				Deformity on Admission.	TREATMENT.					Total.	DEFORMITY ON DISMISSAL.				CONDITION ON DISMISSAL.			Total.	DISMISSED.					Total.	COMPLICATIONS.	
	Abscess.	Sinus.	No Abscess or Sinus.	Total.		Operation.	Aspiration.	Injection.	Appliances.	Other.		Improved.	Not Improved.	Healed, including Arrested.	Improved.	Not Improved.	Fit.	Unfit.		At Own or Parents' request.	For other Reasons.	Died.	Tubercular.	Other.			
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
- 3	—	1	4	5	3	—	—	1	3	1	5	2	1	2	2	1	5	1	—	—	4	—	5	—	2		
- 4	—	—	4	4	4	2	—	—	2	—	4	3	1	3	1	—	4	2	—	1	1	—	4	1	1		
- 5	1	—	3	4	3	—	—	—	4	—	4	3	—	3	1	—	4	2	—	—	2	—	4	1	1		
- 10	4	3	18	25	22	4	3	—	17	1	25	21	1	16	9	—	25	11	—	3	11	—	25	2	7		
- 15	1	4	4	9	4	3	—	—	5	1	9	4	—	4	5	—	9	5	—	—	4	—	9	1	1		
- 20	2	1	4	7	6	1	2	—	4	—	7	3	3	5	1	—	6	5	—	—	1	1	7	4	1		
- 25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
- 35	1	1	3	5	5	—	1	—	4	—	5	5	—	—	5	—	5	2	—	3	—	—	5	2	—		
35 +	1	1	—	2	2	1	—	—	1	—	2	2	—	1	1	—	2	1	—	1	—	—	2	1	—		
Total, ...	10	11	40	61	49	11	6	1	40	3	61	43	6	34	25	1	60	29	—	8	23	1	61	12	13		

SURGICAL CASES: TABLE No. 6. ABDOMINAL TUBERCULOSIS.

Age Groups. *	NATURE OF DISEASE.			CONDITION ON ADMISSION.							TREATMENT		CONDITION ON DISMISSAL.				Total.	DISMISSED.					Total.	COMPLICATIONS.				
	Acute.	Sub-acute.	Chronic.	Total.	Distension.	Gland Masses.	Distension and Glands.	Fluid.	Diarrhoea.	Obstruction.	Other.	Operation.	General including Heliotherapy.	Total.	Arrested.	Much Improved.		Improved.	Not Improved.	Fit.	Unfit.	At Own or Parents' request.		For other Reasons.	Died.	Total.	Tubercular.	Other.
1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
2	—	—	1	1	1	—	—	—	—	—	—	—	1	1	1	1	—	—	—	—	1	1	—	—	—	—		
3	1	2	—	3	2	—	—	1	—	—	—	—	3	3	—	—	—	1	1	—	—	1	1	1	3	1		
4	1	3	—	4	—	—	—	2	1	—	1	4	4	4	2	2	—	—	—	4	2	—	—	2	4	1		
5	—	3	2	5	2	—	—	2	1	—	—	5	5	5	3	1	1	—	—	5	2	—	—	3	5	2		
10	2	11	12	25	8	6	—	4	5	1	1	25	—	25	12	6	3	2	23	8	—	4	11	2	25	7		
15	1	3	3	7	2	—	1	—	3	—	1	7	1	6	7	2	2	1	7	—	—	2	5	—	7	2		
20	4	2	8	14	2	2	2	3	3	—	2	14	1	13	14	5	3	—	4	12	4	—	7	1	2	14	3	
25	—	2	—	2	1	—	—	—	—	—	1	2	—	2	2	1	1	—	—	2	2	—	—	—	2	1		
35	1	—	—	1	—	—	—	—	—	—	1	1	—	1	1	—	—	—	—	—	—	—	—	1	1	—		
45	—	—	1	1	1	—	—	—	—	—	—	1	—	1	1	—	1	—	—	—	—	—	1	—	1	—		
45+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Total	10	26	27	63	19	8	3	12	13	1	7	63	2	61	63	26	15	8	8	57	19	—	14	24	6	63	15	11

SURGICAL CASES: TABLE No. 7. MULTIPLE LESIONS.

Age Groups.	SITE OF PRINCIPAL LESION.					CONDITION ON ADMISSION.					TREATMENT.				CONDITION ON DISMISSAL.			DISMISSED.				Total.	COMPLICATIONS.							
	Glands.	Spine.	Other Bones.	Hip Joints.	Abdomen.	Total.	Sinus.	Abscess.	Sinus and Abscess.	Ulceration.	No Sinus, Abscess or Ulcer.	Total.	Operation.	Aspiration and Injection.	Appliances.	Other.	Total.	Healed, including Arrested.	Improved.	Not Improved.	Total.		Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.	Total.	Tubercular.	Other.
-1	—	—	—	—	1	1	1	—	—	—	—	1	—	—	—	1	1	1	1	—	—	1	1	—	—	—	1	1	—	—
-2	—	—	1	1	1	4	—	2	1	—	1	4	1	1	1	1	1	4	—	3	1	4	—	—	1	3	—	4	2	2
-3	—	1	2	—	—	3	1	—	1	—	1	3	—	—	—	—	3	3	—	3	—	3	—	—	—	3	—	3	3	—
-4	—	1	2	1	1	5	1	1	1	1	1	5	1	—	2	2	5	5	2	2	—	4	1	1	1	2	1	5	5	—
-5	—	1	—	1	—	3	1	2	—	—	—	3	—	2	—	1	3	1	—	1	—	1	—	—	—	1	2	3	2	1
-10	—	5	3	—	2	11	6	2	1	—	2	11	—	—	2	9	11	11	1	6	4	11	—	—	—	11	—	11	4	7
-15	—	—	1	1	1	3	2	—	—	—	1	3	—	—	—	3	3	3	1	1	—	2	1	—	—	1	1	3	1	1
-20	—	2	2	—	—	5	1	3	—	—	1	5	—	1	—	4	5	5	2	1	2	5	2	2	2	1	—	5	4	—
-25	—	2	—	—	1	4	1	1	—	—	2	4	—	1	—	3	4	2	—	—	—	2	2	—	—	—	2	4	3	1
-35	—	—	1	—	1	3	—	2	—	—	1	3	1	1	—	1	3	—	—	1	1	1	—	—	1	—	3	3	—	—
-45	—	—	—	—	1	1	—	—	1	—	—	1	—	—	—	1	1	1	—	—	1	1	1	—	—	—	1	—	—	1
45+	—	1	—	—	—	1	—	—	—	—	1	1	—	—	—	—	1	1	—	—	—	—	—	—	—	1	1	—	—	1
Total.	—	13	12	4	7	8	44	14	13	5	1	11	44	3	6	5	30	44	10	17	8	35	8	—	5	22	9	44	28	14

SURGICAL CASES : TABLE No. 8. GENITO-URINARY and MISCELLANEOUS.

Age Groups.	LOCALISATION OF DISEASE.			Total.	TREATMENT.			Total.	CONDITION ON DISMISSAL.			Total.	DISMISSED.					Total.	COMPLICATIONS.	
	Genito-Urinary.	Skin.	Ear.		Operation.	Tuberculin.	General.		Arrested.	Improved.	Not Improved.		Fit.	Unfit.	At Own or Parents' request.	For other Reasons.	Died.		Tubercular.	Other.
- 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
- 5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-10	—	1	1	2	2	—	—	1	1	—	—	2	1	—	—	1	—	2	—	—
-15	1	1	—	2	1	—	1	—	1	1	—	2	1	—	1	—	—	2	1	—
-20	2	1	—	3	1	—	2	—	2	—	—	2	1	—	—	1	1	3	2	—
-25	5	—	—	5	3	—	2	2	1	1	—	4	2	—	2	—	1	5	2	—
-35	1	—	—	1	1	—	—	—	1	—	—	1	—	—	1	—	—	1	—	1
-45	1	—	—	1	1	—	—	1	1	—	—	1	1	—	—	—	—	1	1	—
45+	2	1	—	3	2	—	1	1	2	—	—	3	2	—	1	—	—	3	3	—
Total,	12	4	1	17	11	—	6	17	5	8	2	15	8	—	5	2	2	17	9	1



## BELLEFIELD SANATORIUM.

During the year ending 31st December, 1930, 161 patients were discharged from this sanatorium after periods of treatment varying in duration from a few weeks to many months. The increase in numbers dealt with compared with the previous year amounts to 32, accounted for by the fact that all possible accommodation was continuously available throughout the year.

The number discharged gives a possible approximate capacity number for this sanatorium provided that the type of case submitted and the period of treatment enjoyed remains approximately the same.

Consideration of the accompanying tables show that the total of 161 cases dealt with were classified as follows:—early 52, intermediate 101, advanced 8. Of the 52 classified as early, 21 showed very definite improvement, and the hope is entertained that, given reasonable care, the need for further sanatorium treatment will not arise. Definite supervision will be necessary in 28 of the cases concerning whom no more could be said than that improvement had taken place, and it is more than likely that the need for further treatment will arise in certain of these cases. One only on discharge of those classified as early showed the presence of bacilli in the sputum. One hundred and one cases classified as being intermediate in type were received for treatment, and out of that total 11 did not acquire during the period of treatment any capacity to resist the progress of the disease. Seventy-five showed definite improvement, and of the 15 who responded most readily to treatment the hope is entertained that the degree of resistance established will enable them to enjoy very reasonable health for a considerable period. Too large a proportion of those discharged show the presence in the sputum of tubercle bacilli.

The number of advanced cases dealt with during the year was comparatively small. Eight only of the total number discharged were considered to be in this category. In all cases the disease showed itself to be extensive and aggressive, and in no case was more than a slight degree of resistance to the disease manifest. Six were transferred to hospital for treatment there, and two could not be persuaded to accept hospital treatment, preferring to return to their homes.

The installation of X-ray apparatus considered sufficient to meet the needs of this sanatorium was completed during the year and has proved to be of undoubted assistance in dealing with many of the cases. Treatment by the establishment of artificial pneumothorax is now able to be undertaken, and has in many cases shown itself to be of considerable help in markedly reducing the evidence of active disease.

The general standard of health enjoyed by the staff has been satisfactory throughout the year.

The poultry farm, extensions to which have now been completed, along with the garden, continue to prove of great benefit to the sanatorium.

A. YOUNG,  
*Physician-Superintendent.*

BELLEFIELD SANATORIUM.—TUBERCULOSIS.—TABLE SHOWING STAGE OF DISEASE, AGE, RESULT OF TREATMENT, &C., OF PATIENTS DISMISSED DURING YEAR 1930.

Age Group.	Result of Treatment.						Work or School.	Reasons for Dismissal		Result of Sputum Examination.						Complica- tions.			
	Arrested.	Much Improved.	Improved.	Not Improved.	Died.	Less than 4 Weeks.		Fit.	Unfit.	Own accord.	Other reasons.	Transferred.	Admitted +. Discharged +.	Admitted +. Discharged -.	Admitted -. Discharged -.	Admitted -. Discharged +.	No Spit.	Tubercular.	Other.
Early Cases—																			
— 5,	—	—	1	—	—	—	1	—	—	1	—	—	—	—	—	1	—	—	1
—10,	—	7	1	1	—	1	9	—	5	4	—	—	—	—	—	9	3	—	9
—15,	—	7	5	—	—	—	11	1	4	8	—	—	1	5	—	6	—	—	12
—20,	—	6	12	—	—	1	18	—	14	4	—	—	—	5	—	13	—	—	18
—25,	—	1	9	1	—	1	10	1	10	1	—	1	1	1	—	8	—	—	11
—35,	—	—	—	1	—	1	1	—	1	—	—	—	—	—	—	1	—	—	1
Totals,	—	21	28	3	—	4	50	2	34	18	—	1	2	11	—	38	3	—	52
Intermediate Cases—																			
—15,	—	—	4	1	—	—	3	2	4	1	—	1	1	2	—	1	—	—	5
—20,	—	2	22	2	—	1	21	5	22	4	—	4	12	5	—	5	—	—	26
—25,	—	6	20	3	—	—	23	6	24	5	—	6	7	11	—	5	—	—	29
—35,	—	7	18	4	—	2	24	5	24	5	—	6	3	6	—	14	—	—	29
—45,	—	—	11	1	—	—	10	2	10	2	—	2	—	4	—	6	—	—	12
Totals,	—	15	75	11	—	3	81	20	84	17	—	19	23	28	—	31	—	—	101
Advanced Cases—																			
—15,	—	—	—	1	—	—	—	1	1	—	—	—	—	1	—	—	—	—	1
—20,	—	—	—	3	—	—	—	3	—	—	3	2	—	1	—	—	—	—	3
—25,	—	—	—	3	—	—	—	3	1	—	2	2	—	1	—	—	—	—	3
—45,	—	—	—	1	—	—	—	1	—	—	1	1	—	—	—	—	—	—	1
Totals,	—	—	—	8	—	—	—	8	2	—	6	5	—	3	—	—	—	—	8

BELLEFIELD SANATORIUM.—YEAR 1930.—TABLE SHOWING CASES DISMISSED, WITH DURATION OF RESIDENCE.

Class.		Number Dismissed.	Number of Deaths.	Duration of Residence—Days.						
				-30	-50	-100	-150	-200	-300	+300
Early,	...	52	—	4	2	7	7	5	12	15
Intermediate,	...	101	—	3	3	26	27	17	13	12
Advanced,	...	8	—	—	—	2	1	2	2	1
Totals,	...	161	—	7	5	35	35	24	27	28

## PART III

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### GENERAL HOSPITALS

AND

### OUTDOOR MEDICAL SERVICES.

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\*Under the Local Government Act, 1929, the Outdoor Medical Services of the Parish Councils were transferred to the Corporation and came under the administration of the Public Health Department. Arrangements were made whereby the services would be continued temporarily without interruption, on practically the same lines as under the Parish Councils. Some alterations were made in the districts of certain of the Medical Officers in order to make them fit in with the five new Public Assistance Divisions into which the city as a whole was divided.

There were, at the time of the transfer, 31 District Medical Officers working in 31 districts. Each District Medical Officer is responsible within his district for the certification of applicants for admission to the Poor Roll, for their medical treatment and the treatment of their dependants, and for the treatment of the dependants of persons in receipt of able-bodied relief. He is also responsible for the routine visitation, four times yearly, of boarded-out mental defectives. In the districts south of the river the Medical Officer undertakes the certification of lunatics, whereas on the northern side this duty is carried out by a part-time specialist.

There were nine public dispensaries taken over from the Parish Councils, and in these a certain proportion of the work under the Poor Law was carried out. These dispensaries were retained, together with their staff of dispensers, and steps are being taken in certain instances to provide more suitable premises. The public dispensaries were :—

17 Broad Street,	
Easter District Hospital,	
Western District Hospital,	
324 St. Vincent Street,	
51 Vine Street—Now transferred to 11 Fortrose Street, which was	
evacuated by the Central Division (Partick Branch) of the	
Public Health Department,	
23 Robert Street,	
12 Portman Street,	
396 Crown Street	} Now combined and transferred to more
51 Carlton Place	
	suitable premises at 2 Abbotsford Place.

Roster consultations, two per day, for the purpose of certification for indoor relief were held at the offices of the Parish Council, 73 John

Street, and also at Carlton Place—the offices of the Govan Parish Council. These consultations have been continued with the addition of two sessions daily at the Public Assistance Office, East Campbell Street.

Seventeen doctors use the public dispensaries for Poor Law work, and the remainder see cases in their own private consulting rooms.

*Volume of Work Done.*—During the part of 1930 following the transfer, i.e., 16th May till 31st December, the number of patients seen by the District Medical Officers at the various medical sessions was 57,546, and 11,623 domiciliary visits were paid. Quarterly visits were made to boarded-out mental defectives, of whom the average number on the register was 294.

The practice has been to send to hospital as many cases as possible who required any degree of active medical or surgical treatment. Maternity cases were mostly sent to hospital, except perhaps an occasional case in some of the outlying districts.

*Vaccinations.*—The District Medical Officers also acted as Vaccination Officers under the Vaccination Acts which up till 16th May, 1931, were administered by the Director of Public Assistance. The number of vaccinations performed during the period under review was 1,275, and 1,328 were postponed through illness. 57 cases were returned as insusceptible. Since the above mentioned date the Vaccination Acts have been administered by the Medical Officer of Health.

*Dental Treatment.*—A considerable amount of dental treatment was supplied to persons making application for medical relief under the Poor Law with regard to artificial dentures. The procedure adopted was as follows:—On receipt of a medical recommendation the patient was sent to one of the part-time dentists at one of the Corporation General Hospitals, and the examination was made and estimate of cost submitted for approval of the Medical Officer of Health and the Director of Public Assistance. Financial circumstances of the patient were ascertained, and enquiries made regarding the contribution which could be obtained from any insurance society of which the applicant may have been a member. Thereafter, the patient was supplied with the necessary dentures and the account passed to the Public Assistance Department for payment.

*Specialist Outdoor Clinics.*—A tentative effort has been made to supply the need for specialist clinics by opening sessions at the Corporation General Hospitals. It is hoped that these services may in time be expanded and may result in a considerable amount of saving in hospital accommodation. In 1930 the following clinics were in operation:—

	Eastern District Hospital.	Western District Hospital.	Stobhill Hospital.	Southern General.
Gynæcological,	Wed. 3.30 p.m.	Mon. 3.30 p.m.	—	—
Mental, ....	Tues. 4.0 p.m.	—	—	—
Skin, ...	Tues. 9.30 a.m.	Thur. 9.30 a.m.	—	—
Dental, ...	Fri. 11.30 a.m.	Wed. and Fri. 11.0 a.m.	Tues., Thur., Sat. 9.0 a.m.	Tues. 9.30 a.m.

It should be pointed out that there is no legal authority for the Corporation to hold these clinics for persons not eligible for poor relief until the adoption of Section 27 of the Local Government Act. The medical staff of these clinics is drawn from the visiting and resident staffs of the hospitals.

### DIABETES—SUPPLY OF INSULIN.

Supplies of insulin are given to persons whose circumstances warrant such assistance and who are not already provided for under the National Insurance Scheme or the Poor Law.

There were 55 new applicants during the year; 43 of these were married women or widows, 7, while of insurable age, were outwith the National Insurance Scheme, 3 were under 16 years of age, 1 was a patient in a Corporation hospital, and 1 ceased to be insured.

Cases on Roll at 31st December, 1929, ... ..	86
„ applying for first time during 1930, ... ..	55
„ who discontinued treatment prior to 31st December, 1929, but re-applied during 1930, ... ..	5
	— 60
	146
Cases who died during 1930, ... ..	15
„ „ discontinued supply during 1930, ... ..	26
	— 41
	105

The 26 cases who discontinued the treatment were visited and inquiries made as to the reason. These may be summarised as follows:—

Removed beyond City Boundary, ... ..	2
Discontinued on Medical Advice, ... ..	6
Discontinued of own accord, ... ..	8
To get supplies from P.A.D., ... ..	1
Hospital Cases now dismissed, ... ..	2
Others, ... ..	7
	— 26

The daily dosage of the cases on the roll at 31st December, 1930, is as follows:—

No. of Cases.	Daily Amount, Under 5 Units.
10 ... ..	5 to 14 „
29 ... ..	15 „ 24 „
23 ... ..	25 „ 34 „
10 ... ..	35 „ 44 „
12 ... ..	45 „ 54 „
9 ... ..	55 Units and over.
3 ... ..	Receiving double strength insulin.
9 ... ..	Not stated.
105	



During the year 8,700 phials of ordinary strength insulin (100 units per 5 c.cs.) and 384 phials of double strength (200 units per 5 c.cs.) were issued, the total cost being £624. The corresponding figures for 1929 were 7,658 phials at a cost of £658.

## ANNUAL REPORT ON GENERAL HOSPITALS.

Details as to the number of beds and staff in each of the transferred general hospitals—Stobhill, Eastern and Western District Hospitals, Southern General Hospital, and Dunculutha Convalescent Home—are given in the section dealing with the Local Government Act. Other brief notes are included in the section dealing with hospitals generally. These institutions were transferred on 16th May, 1930, since when certain re-arrangements have been effected, and others are under contemplation. New forms of returns from these institutions are now in force, which will enable their work to be fully assessed and described. It is proposed to report later on the medical services performed by the general hospitals after some experience has been attained.

The following statement shows the number and nature of the cases treated in the General Hospitals (including the Southern General Hospital) during the period 16th May till 31st December, 1930 :—

DISEASE GROUPS.	Number Dismissed.	Total Days Treatment.	Average Residence
*Acute Infections, ... ..	152	8,978	59.4
Influenza, ... ..	77	1,858	24.1
Tuberculosis—Respiratory, ... ..	228	20,261	88.9
„ Non-respiratory, ... ..	118	20,457	173.4
Malignant Disease, ... ..	289	17,211	59.6
Rheumatism, Acute, ... ..	209	10,962	52.4
„ Muscular, &c., ... ..	133	3,318	24.9
„ Chronic Arthritis, ... ..	140	13,342	95.3
Venereal, ... ..	48	5,732	119.4
Pregnancy and Diseases connected with Child Bearing, ... ..	1,246	22,738	18.2
Congenital Debility and other Diseases of early infancy and Malformations, ...	36	449	12.5
Mental, ... ..	784	42,537	54.3
Senile Decay, ... ..	305	35,439	116.2
Violence, ... ..	339	10,810	31.9
<i>Diseases not included in above.</i>			
Nervous System, ... ..	928	92,055	99.2
Respiratory System, ... ..	1,608	66,510	41.4
Circulatory System, ... ..	573	39,267	68.5
Digestive System, ... ..	1,644	35,169	21.4
Genito-urinary System, ... ..	441	16,073	36.4
Skin, ... ..	495	29,589	59.8
Other Diseases, ... ..	951	47,908	50.4
No appreciable Disease, ... ..	501	33,680	67.2
Born in Hospital, ... ..	855	11,722	13.7
Totals, ... ..	12,100	586,065	48.43

\* Includes Diseases notifiable under the Infectious Diseases (Notification) Act, 1899, with exception of Influenza, Pneumonia, Tuberculosis, and Puerperal Fever. It also includes Measles, German Measles, Chickenpox, Whooping Cough, and Mumps.

## PART IV

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### MENTAL HOSPITALS.

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As the mental hospitals formerly under the administration of the District Board of Control were transferred to this Department on 16th May, it is not proposed in this first report to give more than a brief record of the work done by those institutions during the year 1930.

The decision to transfer the administration of these institutions to the Committee on Health rested, generally speaking, on the following considerations. It has been the policy to treat incipient mental disorder in wards attached to general Poor Law hospitals. This practice has been followed with considerable advantage and is in keeping with the best modern views. These mental wards, along with the hospitals in which they are situated, have been transferred to the Health Department. They are used for observation, curative and classification purposes, and through them there takes place, when necessary, routine transference to mental institutions of such patients as are not admitted there direct.

While it is true that the great majority of certified patients are incurable, asylums and homes for mental defectives have grown up as medical institutions, and practical sentiment regards them as such. Whatever medical and occupational treatment is possible is carried out in them. They are centres of medical research and teaching. Their inmates are subject to a variety of ailments, such as tuberculosis and other affections. Mental and physical health are closely related, and most mental conditions have a bodily or physical accompaniment. Hospital principles enter largely into their construction and administration, while their function as training schools for nurses involve co-ordination with the other hospitals of the Corporation. Such reclassification of cases and extensions of accommodation as it may be convenient to undertake, and as will no doubt be necessary, would be determined largely on medical grounds. Further, it is desirable to view the problem of mental disorder as a whole and in its relation to other branches of the health service. While the mental service for which the Corporation will be responsible is highly specialised and its administration requires expert knowledge, it is difficult to regard it otherwise than as an administrative entity embracing the detection, causation, treatment, and segregation of mentally-affected persons.

Hitherto the treatment of disease has been divided among various Local Authorities, the Corporation being responsible for infectious diseases and child welfare, the Parish Councils for the treatment of the sick poor, and the District Boards of Control for mental conditions.

While the medical service under the Insurance Acts is limited to domiciliary general medical practitioner treatment, it at least covers all conditions of bodily or mental defect. By the Act of 1929, the responsibility of the Corporation is made equally broad, and all aspects of disease, especially as regards institutional treatment, are brought under one Authority.

The following summary statement, and attached notes indicate briefly the number of patients dealt with, and the treatment carried out in the three large mental hospitals under the administration of the Health Committee.

## HAWKHEAD MENTAL HOSPITAL.

### ADMISSIONS, DISCHARGES AND DEATHS DURING THE YEAR, 1930.

	Private Patients.		Pauper Patients.		Total.
	M.	F.	M.	F.	
Resident in asylum on 1st January, 1930, ...	52	7	442	362	863
Cases admitted during the year, ...	1	—	69	86	156
Total cases under care during the year, ...	53	7	511	448	1,019
Cases discharged—					
	Private		Pauper		Total.
	M.	F.	M.	F.	
Recovered, ...	3	1	25	42	71
Not recovered, ...	—	1	10	7	18
Transferred to other institutions, ...	—	—	4	2	6
Total cases discharged during the year, ...	3	2	39	51	95
Patients died during the year, ...	—	—	35	22	57
Remaining in the Asylum on 31st December, 1930,	50	5	437	375	867

During the year the total accommodation in the asylum has been increased by about 40 beds, the number in the newly-opened solarium. This is used for the treatment chiefly of convalescing hospital patients and for those requiring the tonic effects of sunlight treatment. It was not expected to relieve the general pressure upon the accommodation which is still much in evidence in the main building.

The workshops for occupational therapy which are situated below the solarium wards are proving of considerable value and are providing many of the patients with congenial and useful occupation in very pleasant conditions. Many of the male patients who are averse to working in the garden or on the farm are quite pleased to interest themselves in the various occupations provided in the workshops.

Attention is drawn to the high recovery rate as compared with the number of new admissions. This may be partly accounted for by the fact that on the south side of the city cases are seen by the District Medical Officers, and, if necessary, certified and admitted direct to the asylum, whereas on the north side most of the cases are sent in the first instance to the observation wards in Stobhill or Eastern District Hospital thereby obviating the necessity for certification, but depriving the asylums in many cases of recoveries.

All the more recent methods in connection with the treatment of general paralysis of the insane have been used with very considerable success throughout the year.

## GARTLOCH MENTAL HOSPITAL.

## ADMISSIONS, DISCHARGES, AND DEATHS DURING THE YEAR 1930.

					Private Patients.		Pauper Patients.		Total.
					M.	F.	M.	F.	
Resident in asylum on 1st January, 1930,	...	...	...	...	32	—	408	363	803
Cases admitted during the year,	...	...	...	...	2	—	48	77	127
Total cases under care during the year,	...	...	...	...	34	—	456	440	930
Cases discharged—					Private.		Pauper.		Total.
					M.	F.	M.	F.	
Recovered,	...	...	...	...	1	—	18	16	35
Not recovered,	...	...	...	...	—	—	11	13	24
Transferred to other institutions,	...	...	...	...	1	—	1	2	4
Total cases discharged during the year,	...	...	...	...	2	—	30	31	63
Patients died during the year,	...	...	...	...	—	—	34	22	56
Remaining in the asylum, 31st December, 1930,	...	...	...	...	31	—	393	387	811

The number of deaths is the lowest recorded since 1900, when the number was 45, and relatively to the average daily number the death rate is the lowest since the opening of the institution. This is partly attributable to the absence, during the year, of epidemics and to the low admission rate, chiefly because of lack of accommodation.

During the year several cases of general paralysis were subjected to treatment by protein shock therapy with injections of T.A.B. vaccine, and slight amelioration of the signs and symptoms was observed in some cases, but such cases are usually fairly well advanced on admission and therefore not very suitable for treatment.

The number of cases in the dysentery isolation ward has now dwindled to fifteen, all females. These patients have either had an attack of bacillary dysentery, the organism of which is of the Flexner type, or are regarded as "carriers" of the disease. The wisdom of keeping such cases in perpetual isolation was illustrated recently when the excreta of a patient, who had exhibited a slight rise of temperature, but no other signs indicative of dysentery were found to be teeming with the specific organisms. This patient had an attack of dysentery  $3\frac{1}{2}$  years ago.

During the year the process of supplanting the existing private production of electrical energy by a supply from the Clyde Valley Electrical Power Company has been undertaken. The conversion, which has been necessarily slow and involves the rewiring of the whole institution, is proceeding satisfactorily.



## WOODILEE MENTAL HOSPITAL.

### ADMISSIONS, DISCHARGES, AND DEATHS DURING THE YEAR 1930.

	Private Patients.		Pauper Patients.		Total.
	M.	F.	M.	F.	
Resident in asylum on 1st January, 1930, ...	*41	—	603	550	1,194
Cases admitted during the year, ...	2	—	148	90	240
Total cases under care during the year, ...	43	—	751	640	1,434
Cases discharged—	Private.		Pauper.		Total.
	M.	F.	M.	F.	
Recovered, ...	3	—	29	18	50
Not recovered, ...	—	—	20	12	32
Transferred to other institutions,	—	—	3	2	5
Total cases discharged during the year, ...	3	—	52	32	87
Patients died during the year, ...	—	—	55	36	91
Remaining in the asylum, 31st December, 1930, ...	*44	—	640	572	1,256

The numbers marked with an asterisk include service patients plus eight private patients.

From the above table it will be seen that the death rate is comparatively low considering the numbers resident in the institution throughout the year and also the fact that an increasingly large proportion of the patients are seniles. This may be due partly to the absence of epidemics throughout the year and partly to the fact of better care and attention, added to the brightening influence of the entertainments in the institution.

The admission rate is comparatively low owing to lack of accommodation. It is hoped that this may be rectified when extra accommodation is provided in the other asylums.

In addition to the shortage of accommodation for patients there is also considerable shortage of sleeping accommodation for the nurses and domestic staff. The nurses' home is quite inadequate for the needs of the institution and requires to be extended.

## STONEYETTS INSTITUTION FOR MENTAL DEFECTIVES.

	M.	F.	Total.
Number resident in Institution on 1st January, 1930, ....	228	56	284
Cases admitted during the year, ....	65	10	75
Total cases under care during the year, ....	293	66	359
Cases discharged—			
	M.	F.	Total.
To care of relatives, ....	—	4	4
Transferred to other Institutions, ....	—	1	1
Transferred to Asylum, ....	1	—	1
Total cases discharged during the year, ....	1	5	6
Patients died during the year, ....	2	1	3
Remaining in the Institution on 31st Dec., 1930, ....	290	60	350

The high admission rate in this year is accounted for by the fact that Lennox Castle had been opened for the reception of female patients late in 1929 and many of the female patients from Stoneyetts were transferred thither, leaving vacancies which were rapidly filled up in the early months of 1930.

There is now only one pavilion for females at Stoneyetts, the other five being occupied by male patients. The female patients are occupied largely with various domestic duties in the sewing room, kitchen, and laundry.

Several additional crafts have been added during the year to those already in use for the occupation and training of the patients.

Towards the end of the year there was some overcrowding, as the number of patients in residence showed an excess of five over the numbers for which the institution is licensed.

### BLINKBONNY INSTITUTION.

The numbers in this institution remained stationary throughout the year, there being 80 patients in residence on the date of transfer to the Health Department and a similar number on 31st December, 1930. During that period there were four admissions, four discharges and no deaths.



